

HARROW
BUTTERFLIES & MOTHS.

VOLUME II.

BY

J. L. BONHOTE,

AND

N. C. ROTHSCHILD.

H. S. S. S.


1897.



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HARROW SCHOOL
SCIENTIFIC SOCIETY'S MEMOIRS.

1897.

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J. L. BONHOTE, M.B.O.U.,

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PREFACE.

IN placing the concluding Volume of "Harrow Moths" before the public, the authors have to apologise for the unavoidable delay that has occurred in its appearance. At the time when Vol. I was published, the MS on which the Second Volume was to be based was practically complete; but it has been thought advisable for various reasons to re-write the whole, and no pains have been spared to bring the information in the branch of Natural History herein treated of up to date.

A supplement to Vol. I. has been added, making the records in the book complete as far as the authors know to August, 1896.

At the *special* request of several Entomologists we have introduced some additional notes on the *Noctuae*. It must, however, be borne in mind that a book like the present does not pretend to supply a solution to all the difficulties of British Entomology.

The authors wish to point out that, at the time of the publication of Vol. I., Mr. South's was the most recent recognised list of British lepidoptera, and consequently the objection made by the "Entomologist's Record," namely, the retention of the Incompletae (*Zygaena*, *Hepialus*, &c.) among the macro-lepidoptera, is scarcely well founded when a standard list had to be followed.

The objection to the term "*variety*" is again reiterated by the authors. No doubt, as Mr. Tutt says, the term has a definite meaning as far as definition can be given, but as the word is certainly more often used in an inexact sense, it seems wiser to discard it. The term *sub-species* in the present work is the same as Mr. Tutt's *variety*.

Our best thanks are due to Mr. Rowland Brown and Mr. W. D. Lang for additional help in the records.

To Mr. William Warren, Mr. L. W. Byrne, and the Rev. S. Singer, we beg to express our obligations for their invaluable help and criticisms.

Quotations have been taken from the following books not mentioned in Vol. I.:—"British Moths," by J. W. Tutt; and Mr. Meyrick's "Handbook of British Lepidoptera."

J. L. B.
N. C. R.

Trinity College, Cambridge,
April, 1897.

The following names, in addition to those already given in Vol. I., occur throughout the lists in the records :—

SOUTH, R. Editor of the "Entomologist." Records taken from Mr. Cockerell's list.

†CARRINGTON, J. T.	}	These four names are taken from Mr. Rowland Brown's MS list of lepidoptera, taken near Harrow Weald, &c., during the last few years.
PEERS		
WALL		
WATTS		

Members of the Harrow School.

BRIDGWATER, H. N. 1892-96.

LANG, W. D. 1887——. (Member of the school 1894——).

MAGOR, E. J. P. 1888-93.

‡PRIOR, E. S. 1860-75. (Member of the school 1863-70).

READE, G. S. 1891-95.

N.B.—There are many records from *Kingsbury* in Stainton's Manual, which the late Mr. Stainton got from Mr. Bond. Any insects mentioned in the Manual which were not included in Mr. Bond's MS list, have now been recorded in Vol II. or the Supplement.

† Vide "Entomologist," 1380, p. 124, for the records under this name.

‡ Some of these records *may* be the same as Melvill's.

ADVERTISEMENT.

THE HARROW SCHOOL SCIENTIFIC SOCIETY, with a view to a possible new edition of "Harrow Butterflies and Moths," will be glad to receive lists, notes, and corrections from any collectors of Lepidoptera in the Harrow District.

The lists should give (i.) the names of the species, (ii.) the earliest and latest dates on which they were observed, (iii.) exact localities.

Communications should be addressed to —

The Librarian,
Vaughan Library,
Harrow,

who will provide for the safe custody of records.

CORRIGENDA.

NOTE.—In counting the lines on a page, the numberings and headings of chapters and pages are omitted.

Page 7, line 10, and throughout the book, *for* “Grims Dyke” *read* “Grim’s Dyke”.

„ 7, „ 18, *add* “iv. Bond. Kingsbury”.

„ 9, foot note, the *N. lapponaria belonging to Mr. Fry was recently sold.

„ 10, line 16, *for* “*Accentropus” *read* “Acentropus (442)”.

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GEOMETRAE.

INTRODUCTORY NOTE.

The *Geometrae* are a large group of moths, many of them very common, which, owing to their diurnal or crepuscular habits, and their slow flight, will most probably form a considerable percentage of the young entomologist's captures. In the imago state they may be recognised by their small bodies and large wings; the pattern on the fore and hind-wings generally corresponds, and when at rest they lie with their wings expanded and closely pressed against the tree or paling on which they have settled, rendering them very inconspicuous. The fore-wings seldom close over the hind-wings. When boxed they settle down at once quietly, but do not feign death. The larvae have only two pairs of forelegs or claspers, placed on the 10th and 13th segments. When walking the larva holds on with its legs, and brings its first pair of claspers close up to them, thus bending the body into a loop. Many of them have curious irregular warts or protuberances on various parts of their bodies, thus very closely resembling a dead twig; when alarmed they feign death and fall to the ground, where they are almost invisible. The imago may be obtained both at sugar and light, or by beating it out of hedges during the day-time in favourable weather, although what constitutes favourable weather is still a doubtful point.

GEOMETRAE.

UROPTERYGIDAE.

270. *Uropteryx sambucaria* (L.). THE SWALLOW-TAILED-
[MOTH.

- i. Bond. *Kingsbury.*
- ii. Melvill.
- iii. Rhoades-Smith.
- iv. Rowland Brown. *Oxhey Lane* and *Harrow Weald.*
- v. Bonhote. *Green Lane.*
- vi. Rothschild. Common.
- vii. Henley. *The Grove.*

The moth appears in July, and frequents hedgerows, from which it may be beaten.

ENNOMIDAE.

271. *Epione apicaria* (Schiff.). THE BORDERED BEAUTY.

- i. Godwin. *Kingsbury*.
- ii. Rowland Brown. *Harrow Weald*.

The moth is on the wing in July and August. It flies soon after 7 a.m., frequenting hedges. (Merrin). This insect is also found in marshy spots, flying at dusk near its food plant, the sallow.

There are two other species of this genus which occur in the British Islands, **Epione parallellaria* (Schiff.), the Dark-bordered Beauty, and **Epione advenaria* (Hb.), the Little Thorn; the former species closely resembles *E. apicaria*, but the dark border of its forewings runs into the *costa*, while that of *apicaria* runs into the *apex*. **E. advenaria* has wings of a uniform whitish brown colour, with no distinct border.

272. *Rumia luteolata* (L.). THE BRIMSTONE-MOTH.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. Rowland Brown. *Oxhey Lane* and *Harrow Weald*.
- iv. Bonhote. At light.
- v. Rhoades-Smith.
- vi. Rothschild. Common.

The moth is on the wing from May to September. It can be beaten from hedges, and also comes to light.

273. *Venilia macularia* (L.). THE SPECKLED YELLOW.

- i. Melvill.
- ii. Rowland Brown. *Harrow Weald*.
- iii. Watts. *Pinner Woods*.

The moth appears in May and June, flying by day. It frequents woods.

274. *Metrocampa margaritaria* (L.). THE LIGHT EMERALD.

- i. Melvill.
- ii. Godwin. *Kingsbury*.
- iii. Rowland Brown. *Pinner Woods* and *Harrow Weald*.
- iv. Rhoades-Smith.

The moth appears in June and July. It may be beaten from hedges, and also comes to light.

Collectors must not confuse this moth with the members of the family *Geometridae*, as the green, though unfortunately an evanescent colour, gives it a superficial resemblance to *Geometra vernaria*.

275. **Pericallia syringaria** (L.). THE LILAC BEAUTY.

- i. Melvill.
- ii. Bond.
- iii. Rowland Brown. *Harrow Weald*.
- iv. Rhoades-Smith.

The moth is on the wing in June, July, and occasionally in August. It may often be taken flying over flowers at dusk.

276. **Selenia bilunaria** (Esp.). THE EARLY THORN.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. Rowland Brown. *Harrow Weald*.
- iv. Bonhote.†
- v. Meinertzhagen.
- vi. Rhoades-Smith.

The moth is double brooded, appearing in March and April, and again in July.

The two broods of this insect are somewhat different in the *wild* state. The spring form, *S. bilunaria* (Esp.), is larger, and as a rule slightly darker than autumnal specimens, which latter may stand as *ab. juliaria* (Haw.), the July Thorn.

277. **Selenia lunaria** (Schiff.). THE LUNAR THORN.

- i. Rowland Brown.
- ii. Rhoades-Smith.

The moth appears in April, May and June. It frequents woods, and comes to light. (Merrin).

This species also shows a considerable amount of seasonable variation. The summer form of this species is *ab. delunaria* (Hb.)

† I bred some from the egg during the summer of 1891, producing from the same brood both spring and autumn forms. (J.L.B.).

278. **Selenia tetralunaria** (Hufn.). THE PURPLE THORN.

i. Rowland Brown. *Harrow Weald*.

The moth appears in April and May, and again in July and August. It frequents woods, and comes to light.

The three species of *Selenia* are rather closely allied. *S. bilunaria*, the Early Thorn, has *no* lunules in the wings, and the central line of the fore-wings is *equidistant* from the first and second lines. *S. lunaria*, the Lunar Thorn, generally has lunules in the wings, though sometimes they are wanting; it may, however, be distinguished from *bilunaria*, since the central line *approaches* the second line. *S. tetralunaria*, the Purple Thorn, has always very distinct lunules, and the second line is continued right across the hind-wing, the inner half of which is, as a rule, darker than the marginal half.

279. **Odontopera bidentata** (Clerk). THE SCALLOPED

i. Melvill. [HAZEL.

ii. Bond. *Kingsbury*.

iii. Rowland Brown. At light. *Harrow Weald*.

The moth appears in April and May. It can often be found at rest on trees and palings.

280 **Crocallis elinguaris** (L.). THE SCALLOPED OAK.

i. Melvill.

ii. Bond. *Kingsbury*.

iii. Rowland Brown. *Harrow Weald*.

iv. Rhoades-Smith.

v. Bonhote. Two larvae in *Mrs. Prior's Garden*.

vi. Rothschild. One specimen at rest.

The moth appears in July and August. It may be found at rest in hedges, and also comes to light.

281. **Eugonia alniaria** (L.). THE CANARY-SHOULDERED

i. Bonhote. Larvae on *Recreation Ground*. [THORN.

ii. Rothschild. At light. *The Grove*.

The moth appears in August and September. It comes freely to light, and may often be found on street lamps.

282. **Eugonia erosaria** (Bork.). THE SEPTEMBER THORN.

i. Watts. *Pinner*.

The moth is on the wing from July to September. It frequents woods. (Merrin).

283. *Eugonia quercinaria* (Hufn.). THE AUGUST THORN.i. Bond. *Kingsbury*.ii. Rowland Brown. *Harrow Weald*.

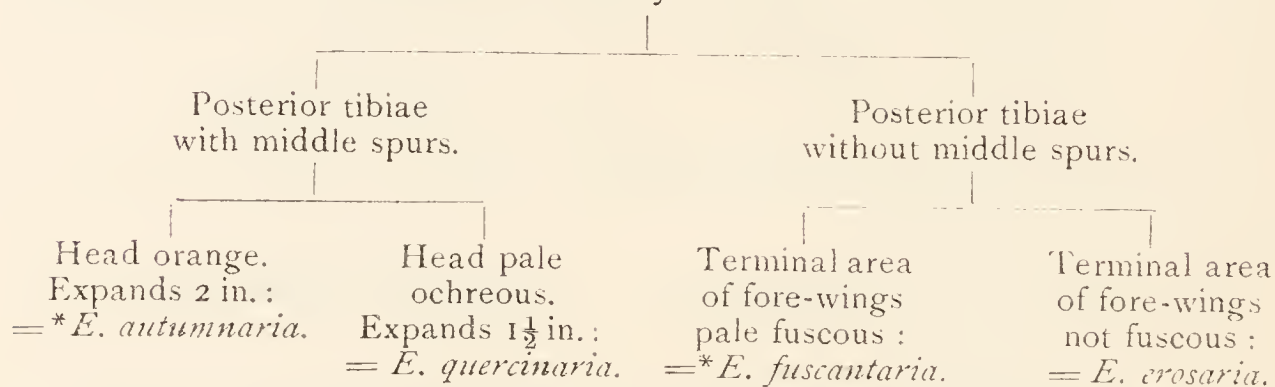
The moth is on the wing from July to September. It may be found at rest, and comes readily to light.

There are five species of *Eugonia* found in the British Islands, of which two are unrecorded from the Harrow district, viz.: . **E. autumnaria* (Wernb.), the Large Thorn, which was formerly a rarity in this country, but is now fairly common in some localities, having been artificially introduced; and **E. fuscantaria* (Haw.), the Dusky Thorn, which may have been overlooked.

Key to the genus *Eugonia*, adapted from Meyrick.

I.—Thorax canary-coloured = *E. alniaria*.

II.—Thorax not canary-coloured.



**Eugonia fuscantaria* has a more or less distinct dark spot in the fore-wings.

284. *Himera pennaria* (L.). THE FEATHERED THORN.i. Bond. *Kingsbury*.ii. Rowland Brown. *Harrow Weald*.

iii. Rhoades-Smith.

iv. Bonhote. At light.

v. Rothschild. Common at light.

vi. Reade. At light.

vii. Henley. At light.

This moth, which is very common in the Harrow district, is on the wing during October and November.

The small dark white centred spot near the apex of each fore-wing, distinguishes this moth from all the other so called "Thorns."

AMPHIDASYDAE.

285. **Phigalia pedaria** (Fb.). THE PALE BRINDLED BEAUTY.

- i. Bond. *Hendon*.
- ii. Rowland Brown. *Harrow Weald*.
- iii. Rothschild. At light. *The Grove*.
- iv. Reade. At light. February, 1894.

The moth is on the wing from December to March. The male comes freely to light. The female has abortive wings and may be found on tree trunks.

286. **Nyssia hispidaria** (Fb.). THE SMALL BRINDLED BEAUTY.

- i. Wall. *Grims Dyke*. One female. (*Teste* Rowland Brown).

The moth is on the wing in February and March.

This insect appears to be a rarity in the Harrow district; it is more abundant in Richmond Park and Tilgate Forest.

287. **Biston hirtaria** (Clerk). THE BRINDLED BEAUTY.

- i. Rowland Brown. *Harrow Weald*.
- ii. Lang. Common.
- iii. Rothschild. One specimen at rest.

The moth is on the wing from February to April. It may be found at rest on tree trunks, sometimes in great numbers.

288. **Amphidasys strataria** (Hufn.). THE OAK BEAUTY.

- i. Melvill
- ii. Bond. *Kingsbury*.
- iii. Rowland Brown. *Harrow Weald*. (1893).

The moth appears in March and April. It may be found at rest on oak trunks. (Merrin).

289. **Amphidasys betularia** (L.). THE PEPPERED MOTH.

- i. Melvill.
- ii. Rowland Brown. *Harrow Weald*.
- iii. Rhoades-Smith. Pupae near *Pinner*.
- iv. Bonhote. *Cricket Field* and *Butler Schools*.
- v. Rothschild. *Philathletic Field*.

The moth appears in May and June. It may be found at rest on trees and palings.

There is an aberration of this moth found in the North of England in which all the wings are of a uniform sooty brown, known as **ab. doubledayaria* Mill. This species may be at once distinguished from the preceding one by the absence of the broad bands across the fore-wings.

Key to the *Amphidasidae*, after Stainton.

Males.

- I.—Antennae pectinated, not plumose = *Amphidasys*.
- II.—Antennae plumose.
 - i. Fore-wings oblong = *Nyssia*.
 - ii. Fore-wings ample.
 - (a) Abdomen slender = *Phigalia*.
 - (b) Abdomen stout = *Biston*.

Females.

- I.—Wings abortive = *Phigalia* and *Nyssia* (see next chapter).
- II.—Wings well developed.
 - i. Wings narrower than in male = *Biston*.
 - ii. Wings alike in both sexes = *Amphidasys*.

KEY TO THE APTEROUS FEMALE HETEROCERA.

N.B.—The numbers after the species refer to the paragraph in which the insect is recorded.

I.—Anal tuft present = *Anisopteryx aescularia*. (336)

II.—Anal tuft not present.

A. Wings quite obsolete.

i. White with black spots = *Hybernia defoliaria*.

B. Wings very small, antennae very short, barely .125 in. long.

i. Antennae with very minute pectinations or teeth = **Orgyia gonostigma*.

ii. Antennae with two conspicuous rows of pectinations or teeth = *Orgyia antiqua*. (86)

C. Wings as in B. Antennae not very short, more than .125 in. long.

i. No markings on the wings. A double row of spots on the body = *Hybernia leucophearia*. (332)

ii. Body banded black and white = **Nyssia zonaria*.

iii. Body black covered with very long whitish hairs, and with an orange stripe running down the back = **Nyssia lapponaria*.†

iv. Dirty brownish black. Antennae and legs covered with scattered hair = *Nyssia hispidaria*. (286)

v. Uniform grey all over. Antennae and legs perfectly naked = *Phigalia pedaria*. (285)

† **Nyssia lapponaria* Bdv., the Rannoch Beauty, was admitted into the British list upon the evidence of a single male specimen captured by Mr. Warrington, a professional collector, on April 4th, 1871, at Loch Rannoch, in Perthshire; *vide* E.M.M. vii., p. 282. This specimen has passed through several hands and is now in the collection of Mr. Clarence Fry; *vide* "Entomologist" xxviii., p. 163. In 1895 Mr. Christy was fortunate enough to breed some specimens of this insect from larvae he found in Scotland, of which I have examined a pair, and the life history of some of his specimens has been published by Mr. Frohawk, "Entomologist" xxviii., pp. 237-240. Mr. Fry's and Mr. Christy's specimens agree exactly with two moths sent to me by Dr. Staudinger of Dresden, under the name of **lapponaria* from *Silesia*, but they do not agree with specimens sent to me by him from *South Russia*; these latter are much more like **Nyssia pomonaria* Dup., an apparently non-British species, though recorded as British by Albin in 1749. N.C.R.

- D. Wings about a quarter the length of the body. Antennae as in C.
 - i. Two transverse lines and a marginal band in the fore-wings, and a sub-marginal band in the hind-wings = *Hybernia aurantiaria*. (333)
 - ii. Wings narrow, hardly a quarter of the length of the body = *Cheimatobia brumata*. (337)
 - iii. Wings wider with very long ciliae, fully a quarter or more of the length of the body = **Cheimatobia boreata*.†
- E. Wings half the length of the body, antennae as in C.
 - i. One broad transverse band in the fore-wings and a very faint transverse streak in the hind = *Hybernia rupicaprararia*. (331)
 - ii. Wings semi-diaphanous; dirty white all over = **Acentropus niveus*.
- F. Hind-wings larger than the fore-wings, being about three-quarters the length of the body.
 - i. Two bands in the fore-wings and one in the hind = *Hybernia marginaria*. (334)

† *Cheimatobia brumata* and *boreata* are very hard to distinguish. Kirby says that the female of *brumata* has two transverse lines in the fore-wings, while **boreata* has one, but this is not a constant character. **C. boreata* is recorded from Middlesex and it is far from uncommon in most of the midland counties.

BOARMIIDAE.

INTRODUCTORY NOTE.

The *Boarmiidae* are the first family of the *Geometrae* with which the collector will find any serious difficulty. There are seven genera comprising eighteen species. The chief difficulty is that the genera have been founded in many cases on the characters of the males alone, and consequently do not readily admit of a tabular classification.

The genera *Hemerophila* and **Psodos* (the latter a Scotch insect) contain each one species. These genera are so distinct that they require no more notice. The genera **Gnophos* and **Dasydia*, likewise containing one species each, can for convenience of identification be treated as one genus, being recognised by having vein † 11 present; while the two insects can be distinguished by **obscuraria* having the discal spot in the hind-wings pale centred, which is not the case in **obfuscaria* (Meyrick's distinction). Of the remaining three genera *Cleora* has the fore-wings entire and rounded, while in *Boarmia* and *Tephrosia* they are dentate.

Care must be taken not to confuse members of this family with those of the *Hyberniidae* and species belonging to the genera *Cheimatobia* and *Oporabia*.

290. ***Hemerophila abruptaria*** (Thnb.). THE WAVED UMBER.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. Rowland Brown. *Harrow Weald*.
- iv. Rhoades-Smith.
- v. Wood. At light.
- vi. Rothschild. Common at rest.
- vii. Reade.

The moth is on the wing during May, June, and July. It may be found at rest on tree-trunks and palings. It also comes to light.

291. ***Cleora lichenaria*** (Hufn.). THE BRUSSELS LACE.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. Rowland Brown. Larvae common in *Pinner Woods*.

† The first subcostal nervule.

The moth appears in June and July, and is found at rest on lichen-covered oak trunks. (Merrin).

A key to this genus, after Stainton, may be useful.

I. Ground colour of fore-wings white.

i. No central shade. **C. glabraria*.

II. Ground colour of fore-wings whitish.

i. Fore-wings with a distinct blackish central shade, no greenish tinge. **C. angularia*.†

ii. Fore-wings tinged with greenish, second line very distinct. *C. lichenaria*.

292. **Boarmia repandata** (L.). THE MOTTLED BEAUTY.

i. Melvill.

ii. Bond. *Kingsbury*.

iii. Rhoades-Smith.

iv. Rowland Brown. *Harrow Weald*.

v. Rothschild.

The moth appears in June and July. It may be found at rest on palings, tree-trunks, &c., and also comes to light and sugar.

This moth and the following are very closely allied and difficult to distinguish. The subterminal line in *gemmaria* is sinuous, but not much indented, while in the present species this line is much indented.

293. **Boarmia gemmaria** (Brahm.). THE WILLOW BEAUTY.

i. Melvill.

ii. Bond. *Kingsbury* and *Stanmore*.

iii. Rowland Brown. *Harrow Weald*.

iv. Rhoades-Smith.

v. Bonhote. At light.

vi. Rothschild.

The moth appears in June and July. It has the same habits as the previously mentioned species.

294. **Boarmia roboraria** (Schiff.). THE GREAT OAK BEAUTY.

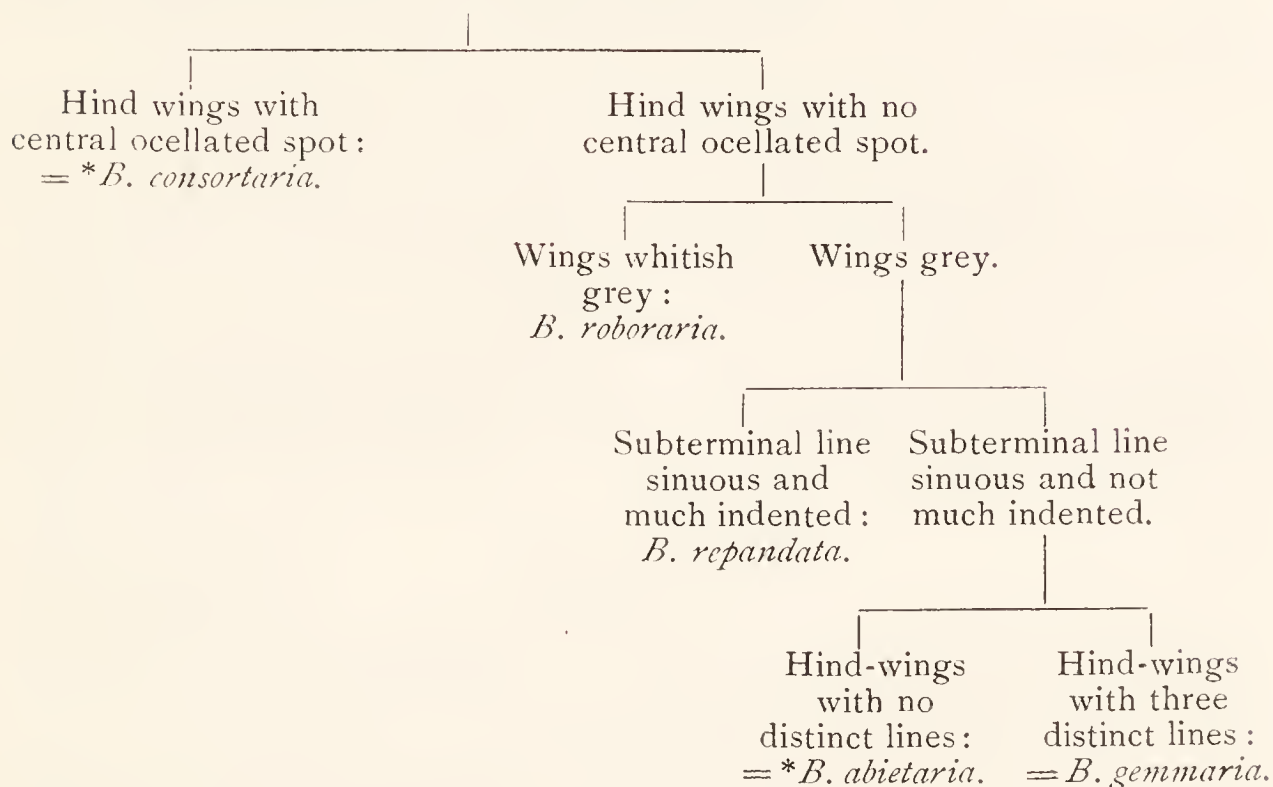
i. Watts. *Pinner*. One specimen, 1882.

The moth appears in June and July. It may be found at rest on oak trees. (Merrin).

† **C. angularia* (Thnb.), the Speckled Beauty, is a rare species, which has only been taken at Brighton and in the New Forest, and is now most probably extinct.

Key to the genus *Boarmia*, after Stainton.I.—Base of the abdomen with a white belt = **B. cinctaria*.

II.—Base of abdomen with no white belt.



Of the three species of *Boarmia* which are unrecorded from the Harrow district, **B. cinctaria* (Hb.), the Ringed Carpet, is a local species, occurring near heath; and **B. abietaria* (Schiff.), the Satin Carpet, is also local, being only found in pine forests; **B. consortaria* (Fb.), the Pale Oak Beauty, is recorded in the Flora of Harrow, but on unsatisfactory evidence: it is a local species.

295. **Tephrosia crepuscularia** (Hb.). THE SMALL ENGRAILED.i. Watts. *Pinner*.

The moth appears in February, March, and April. It may be found at rest on tree-trunks. (Merrin.).

Collectors are cautioned not to confuse this genus with the preceeding one, *Boarmia*.

296. **Tephrosia biundularia** (Bork.). THE ENGRAILED.i. Rowland Brown. *Harrow Weald*.

The moth appears in April and May, and may be found at rest on tree-trunks and palings.

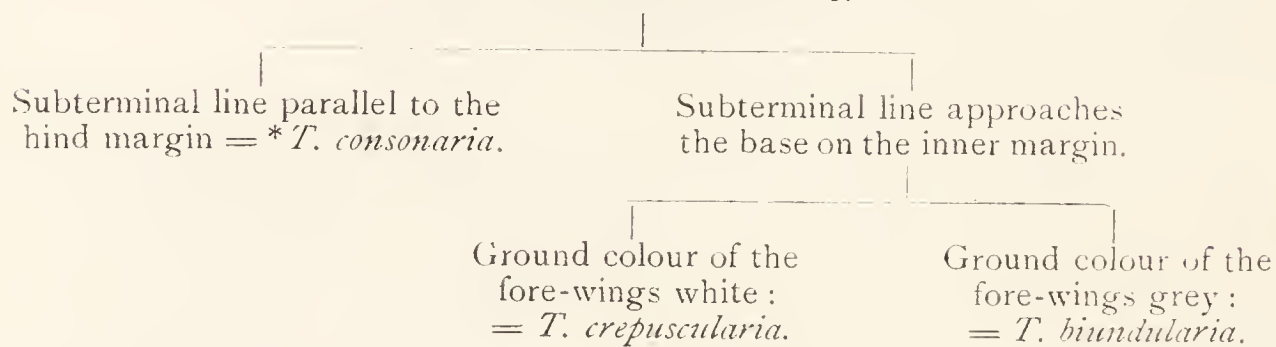
This moth is very closely allied to the preceeding species; it can, however, be distinguished from it, since the ground colour of its wings is grey, while that of *T. crepuscularia* is white.

297. **Tephrosia punctularia** (Hb.). THE GREY BIRCH-
i. Melvill. *Ruislip*. One specimen. [MOTH.

The moth appears in May and June. It may be found at rest on tree-trunks.

Key to the genus *Tephrosia*, after Stainton.

- I.—Fore-wings of moderate size with no conspicuous pale blotch in the subterminal line.



- II.—Fore-wings of moderate size ; a conspicuous pale blotch in the middle of the subterminal line = **T. luridata*.

- III.—Fore-wings of smaller size with distinct black spots on the costa at the commencement of the first line, central shade, and second line = *T. punctularia*.

GEOMETRIDAE.

298. **Pseudoterpna pruinata** (Hufn.). THE GRASS EMERALD.

i. Bond. *Stannmore*.

The moth appears in June and July. It frequents heaths and waste places. When at rest it can be beaten from heather or furze, and flies rapidly for a short distance, when it suddenly drops.

The wings are of a dull grey-green colour, with two indistinct transverse lines of a darker shade on the fore-wings, and one on the hind-wings. There is also a single faint white line across both wings.

299. **Geometra papilionaria** (L.). THE LARGE EMERALD.

i. Rowland Brown. *Harrow Weald*.

The moth appears in June and July. It can be beaten from trees, and according to Merrin comes to light.

300. **Geometra vernaria** Hb. THE SMALL EMERALD.

i. Bonhote. *Green Lane*.

The moth appears in July. It can be beaten from the Wild Clematis† (*Clematis vitalba*), and also comes to light.

301. **Phorodesma pustulata** (Hufn.). THE BLOTCHED

i. Rowland Brown. *Harrow Weald*. [EMERALD.

The moth appears in June and July, and, according to Merrin, in September. The same author says that it should be sought for at dusk among or near oak trees, and that the female attracts the male. It is also attracted by sugar.

302. **Iodis lactearia** (L.). THE LIGHT EMERALD.

i. Bond. *Kingsbury*.

ii. Rowland Brown. *Harrow Weald*.

iii. Rhoades-Smith.

iv. Bonhote. *Green Lane*.

† This plant, when running to seed, is popularly known as Old Man's Beard.

The moth appears in May and June. It flies by day in open places, and near woods.

303. **Hemithea strigata** (Mull.). THE COMMON EMERALD.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. Rowland Brown. *Harrow Weald*.
- iv. Godwin. *Kingsbury*.
- v. Rhoades-Smith.

The moth appears in June and July. It may be beaten from hedges. (Merrin).

EPHYRIDAE.

304. *Zonosoma porata* (Fb.). THE FALSE MOCHA.

i. Melvill.

ii. Bond. *Stanmore*.

The moth is double-brooded, appearing in May, and again in August.

305. *Zonosoma punctaria* (L.). THE MAIDEN'S BLUSH.

i. Melvill.

This moth is on the wing in May and September.

This species may be at once distinguished from the preceeding one by the absence of the ocelli in the wings. **Z. annulata* (Schulz.), the Mocha, which may possibly have been overlooked in this district, has a broad serrated black bar running across each wing ; while the ocelli are also well marked.

ACIDALIIDAE.

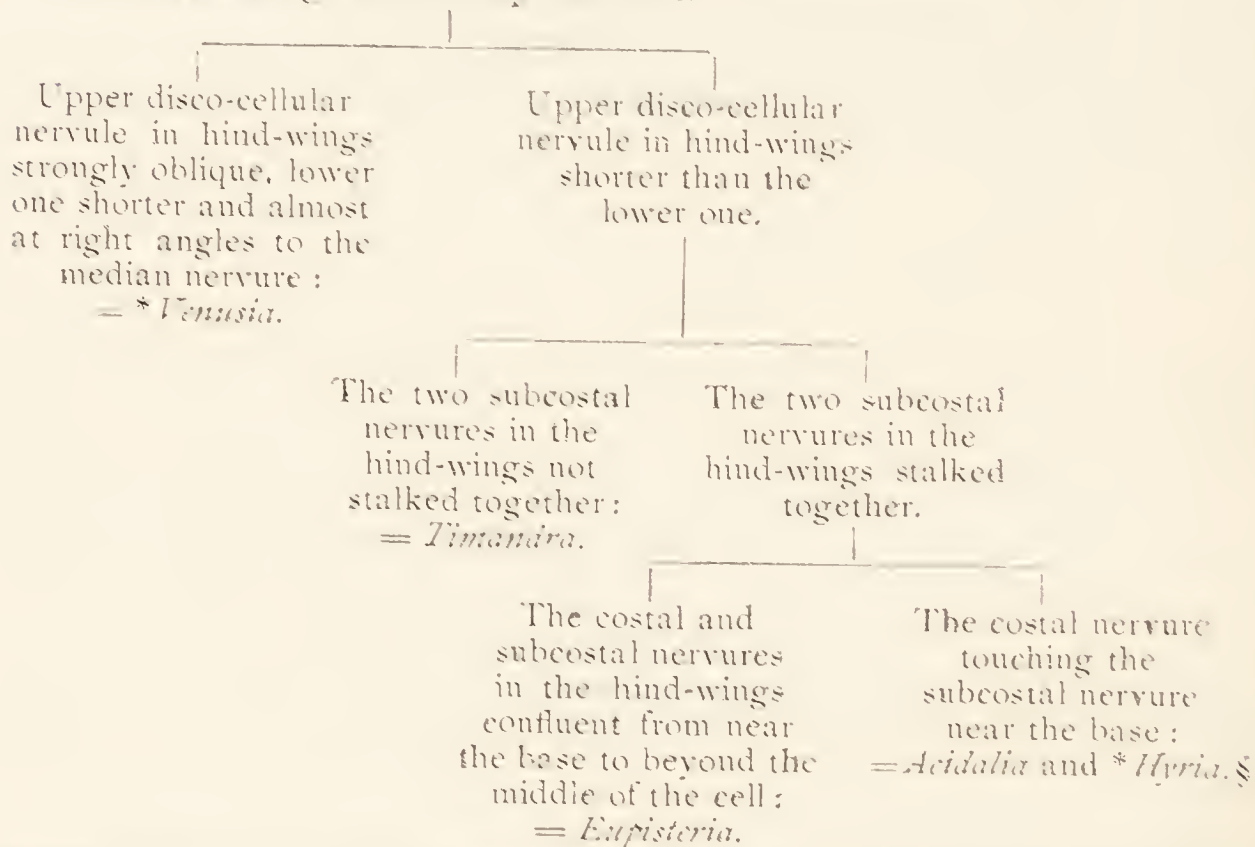
INTRODUCTORY NOTE.

The *Acidaliidae* contain six genera of dull coloured moths comprising thirty-six species; of these six genera two are unrecorded from the Harrow district, namely **Venusia* and **Hyria*. Each of these contains one species only, **Venusia cambrica* Curt., the Welsh Wave, a moth found in the northern counties of England, and **Hyria muricata* (Hufn.), the Golden-bordered Purple, which is a local insect.

Key to the *Acidaliidae*.

I.—Fore-wings† with double areole‡ = *Asthena*.

II.—Fore-wings with simple areole.



¶ **Acidalia herbariata* (Fb.), the Spotted Wave, and **Acidalia strigaria* (Hb.), the Streaked Wave, are not generally admitted into the British list.

† The neurulation of *lepidoptera* can be readily examined by wetting the wings with chloroform or benzine.

‡ An areole is a secondary cell formed by the anastomosis (*i.e.*, the union for a certain distance and separation again) of veins. (Meyrick).

§ The yellow and purple colours of **Hyria muricata*, the sole British species, distinguish it from all other members of the *Acidaliidae*.

306. ***Asthena luteata*** (Schiff.). THE SMALL YELLOW WAVE.

i. Bond. *Kingsbury*.

The moth is to be found in woods during June.

307. ***Asthena candidata*** (Schiff.). THE SMALL WHITE WAVE.

i. Melvill.

ii. Bond. *Kingsbury*.

iii. Watts. *Pinner*.

iv. Godwin. *Kingsbury*.

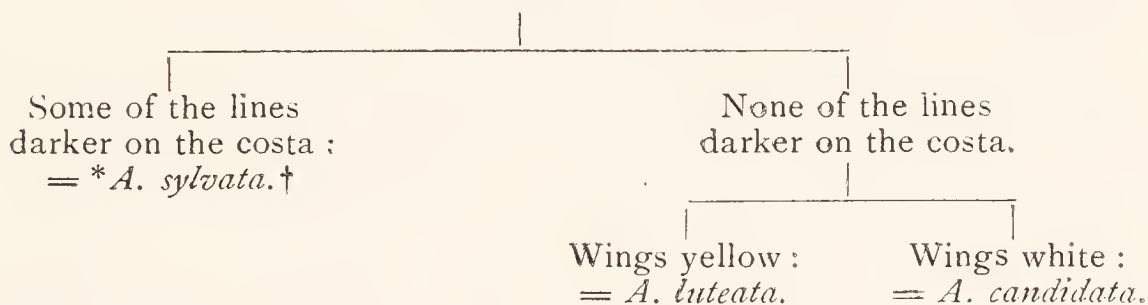
v. Rhoades-Smith. 1895.

The moth appears in May and June, and inhabits woods. (Merrin).

Key to the genus *Asthena*, after Stainton.

I.—Fore-wings with large tawny apical blotch = **A. blomeri*.†

II.—Fore-wings with no tawny blotch, and numerous wavy transverse lines.



308. ***Eupisteria obliterata*** (Hufn.). THE DINGY SHELL.

i. Melvill.

ii. Rhoades-Smith. 1895.

The moth is on the wing in June and July, and may be beaten from alders (Merrin).

INTRODUCTORY NOTE TO THE GENUS ACIDALIA.

The genus *Acidalia* comprises twenty-eight British species, most of which are dull coloured and hard to identify. Of these twenty-eight species seven are recorded from the Harrow district, and of the remaining twenty-one, **Acidalia perocharia* Fisch., the Ochraceous Wave, is extremely rare in the British Islands, two specimens only having been taken near Red Hill (J. W. Tutt, *British*

† **Asthena blomeri* (Curt.), Blomer's Rivulet, and **Asthena sylvata* (Hb.), the Waved Carpet, are both local though not uncommon species.

Moths); **A. ochrata* (Scop.), the Bright Wave, is very local, being found in Kent on the coast, as at Sandwich and Deal; **A. rubiginata* (Hufn.), the Tawny Wave, is confined to the Breck sands, as at Brandon, Thetford, &c.; **A. trigeminata* (Haw.), the Treble Brown Spot, is found only in the Western Counties of England; **A. configuaria* (Hb.), Greening's Wave, is another local species, being confined to North Wales, as at Penmaenmawr; **A. rusticata* (Fb.), the Least Carpet, is common in Kent; **A. holosericata* Dup., the Silky Wave, is common in the West of England, as at Bristol; **A. humiliata* (Hufn.), the Isle of Wight Wave, is a local species, having been taken on the Freshwater Downs (J. W. Tutt, *British Moths*); **A. dilutaria* (Hb.), the Dark Cream Wave, is common in most of the Southern Counties of England; **A. circellata* Gn., the Circellate, was formerly taken at Chatmoss, Lancashire, but there are no recent records: it is possibly a sub-species; **A. ornata* (Scop.), the Lace Border, is abundant in Kent and several other counties, but is a local species; **A. marginepunctata* (Goze), the Dotted-bordered Wave, is common in many parts of England, but is local; **A. straminata*, Tr., the Dotted-border Cream Wave, is a very local insect; it has been taken in Yorkshire and at Lyndhurst (J. W. Tutt): the previously mentioned **A. circellata* is probably a sub-species of this insect. **A. subsericeata* (Haw.), the Satin Wave, is a local though widely distributed species in England; a sub-species of this insect, **manconiata* Knaggs, Knagg's Wave, occurs in the Manchester district; **A. immutata* (L.), the Lesser Cream Wave, is a local species, being common in marshy places in the South of England; **A. fumata* St., the Smoky Wave, is found on heaths in the North of England and Scotland; **A. strigilaria* (Hb.), the Sub-angled Wave, has only been taken, as regards Great Britain, at Folkestone; **A. emutaria* (Hb.), the Rosy Wave, is found in the New Forest and in Kent, chiefly near the coast; **A. inornata* (Haw.), the Plain Wave, is generally distributed over England, but not common; *A. degeneraria* (Hb.), the Portland Ribband Wave, is confined to the Isle of Portland alone; and **A. immorata* (L.), the Lewes Wave, has only been taken near Lewes, in Sussex.

309. ***Acidalia dimidiata*** (Hufn.). THE SINGLE-DOTTED WAVE.

i. Bond. *Kingsbury*.

ii. Rowland Brown. *Harrow Weald*.

The moth appears about midsummer, and may be beaten from hedges.

310. **Acidalia bisetata** (Hufn.). THE SMALL FAN-FOOTED
 i. Melvill. [WAVE.
 ii. Rowland Brown. *Harrow Weald*.
 iii. Rothschild.

This moth makes its appearance about midsummer, and comes to light.

Allied to this insect is the previously mentioned **A. trigeminata*; it may, however, be distinguished from it, as it has the dark band just beyond the centre of the wing very distinctly marked off. (J. W. Tutt).

311. **Acidalia virgularia** (Hb.). THE SMALL DUSTY WAVE.
 i. Bond. *Kingsbury*.
 ii. South. *Kingsbury*.
 iii. Rhoades-Smith.
 iv. Rothschild. Common at rest on palings.
 v. Rowland Brown.

The moth is on the wing from June to August, it may be found on palings, and comes to light.

Collectors are cautioned not to confuse this insect with members of the genus *Eupithecia*, with which insects we have often seen it placed.

312. **Acidalia remutaria** (Hb.). THE CREAM WAVE.
 i. Watts. *Pinner*.
 ii. Rothschild. *The Grove*.
 iii. Rowland Brown. *Harrow Weald*.
 iv. Bond. *Kingsbury*.

The moth appears in May and June, and frequents woods.

There are three other species very closely allied to this insect, viz., **A. immutata* (L.), the Lesser Cream Wave, which has *five* transverse wavy lines on each fore-wing, and a black dot on all the wings. **A. fumata* St., the Smoky Wave, has *four* lines on each fore-wing, *no* black dots, and, as its name implies, is a more dingy insect. **A. strigilaria* (Hb.), the Subangled Wave, has two distinct and two indistinct lines on each fore-wing, and a black dot on each wing. *A. remutaria* itself has four lines on each fore-wing, and a black dot on the hind-wings only.

313. **Acidalia imitaria** (Hb.). THE SMALL BLOOD VEIN.
 i. Melvill.
 ii. Bond. *Kingsbury*.

The moth appears in July and August, it may be beaten from hedges, and comes to light.

314. **Acidalia aversata** (L.). THE RIBAND WAVE.

- i. Melvill.
- ii. Rhoades-Smith.
- iii. Tyser. *Greenhill*.
- iv. Rothschild.
- v. Rowland Brown.
- vi. Rothschild. } *ab. spoliata*.

The moth appears in June and July, and is often found at rest on palings.

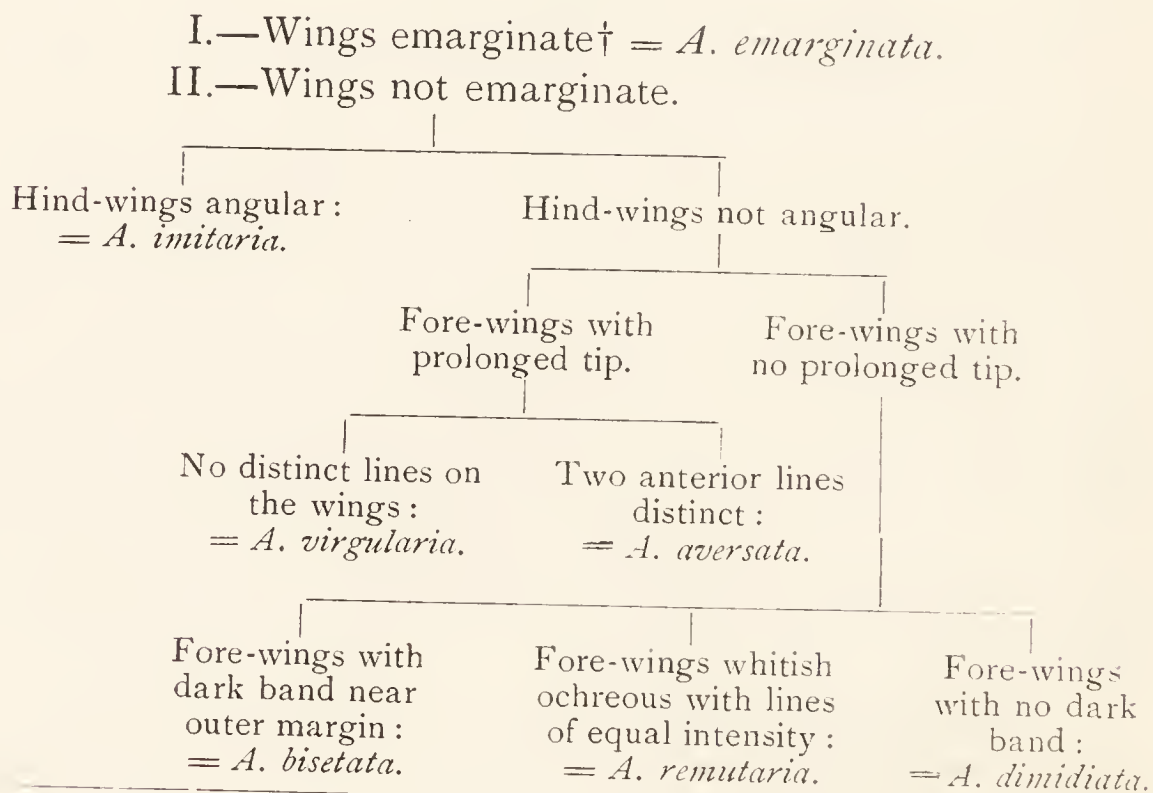
There are two forms of this insect, one of which has the fore and hind-wings crossed by a broad transverse brown band, and has also a faint transverse line near the base of the fore-wings; this is the true *A. aversata*. The form which has instead of a band two transverse lines running through both fore and hind-wings (besides the one near the base of the fore-wings), was named by Dr. Staudinger, *ab. spoliata*.

315. **Acidalia emarginata** (L.). THE SMALL SCALLOP.

- i. Bond. *Kingsbury*.

The moth is on the wing in June, and comes to light.

Key to those species of *Acidaliae* recorded in the district, adapted from Stainton.



† Emarginate, that is to say, with a wavy, *not* continuous, outline.

316. **Timandra amataria** (L.). THE BLOOD VEIN.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. South. *Harrow* and *Pinner*.
- iv. Watts. *Hendon*.
- v. Rowland Brown. *Oxhey Lane*.
- vi. Rhoades-Smith.
- vii. Bonhote. *Green Lane*.

The moth appears in June, frequenting hedges in lanes. (Merrin).

CABERIDAE.

317. **Cabera pusaria** (L.). COMMON WHITE WAVE.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. Rhoades-Smith.
- iv. Rowland Brown. *Oxhey Lane*.
- v. Bonhote. *Green Lane*.
- vi. Rothschild.

The moth appears in May and June. It can be beaten from hedges, and comes to light.

The genus *Cabera* can be distinguished from *Acidalia* by the *upper discoidal nervule* of the hind-wings being obsolete.

318. **Cabera exanthemata** (Scop.). THE COMMON WAVE.

- i. Rowland Brown. *Oxhey Lane*.
- ii. Rothschild.

The moth is on the wing in May and June, and is similar in habits to the preceding species.

These two species are very closely allied. *C. pusaria* can be distinguished from *C. exanthemata*, since it has the bands in the fore-wings more distinct, while *C. exanthemata* is much more speckled. **Cabera rotundaria* (Haw.), the Round-winged White Wave, is distinguished from both the above-named insects by having generally only two transverse bands on the fore-wings; the third, when present, is always indistinct and incomplete, *i.e.*, not running through the whole of the wing; it is, according to Mr. Tutt, an aberration of *Cabera pusaria*, being the offspring of a half starved larva: it occurs with *C. pusaria*.

MACARIIDAE.

319. **Macaria alternata** (Hb.). THE SHARP ANGLED PEACOCK.

i. Rowland Brown. *Grims Dyke*.

The moth appears in July, and is rather a scarce insect.

320. **Macaria liturata** (Clerck). THE TAWNY-BARRED ANGLE.

i. Rowland Brown. *Harrow Weald*.

The moth is on the wing in July, and inhabits woods.

321. **Halia vauaria** (L.). THE V MOTH.

i. Melvill.

ii. Bond. *Kingsbury*.

iii. Rowland Brown. *Oxhey Lane*.

iv. Rhoades-Smith.

v. Rothschild.

The moth appears in July; it may be taken at rest on walls, &c., and also comes to light.

The second species, **Halia brunneata* (Thnb.), the Rannoch Geometer, is a species confined to Scotland, where it is not uncommon.

FIDONIIDAE.

322. **Strenia clathrata** (L.). THE LATTICED HEATH.

- i. Melvill.
- ii. Rowland Brown. *Pinner Woods*.

The moth is to be found in clover fields, in May and June.

Collectors are cautioned not to mistake this insect for the female of **Ematurga atomaria* (L.), the Common Heath.

323. **Panagra petraria** (Hb.). THE BROWN SILVER LINE.

- i. Rhoades-Smith.
- ii. Rowland Brown. *Harrow Weald Common*. Abundant.

The moth appears in May and June ; it frequents bracken, from which it may be beaten.

324. **Numeria pulveraria** (L.). THE BARKED UMBER.

- i. Bond. *Kingsbury*.

The moth is on the wing in June, flying by day near copses.

325. **Bupalus piniaria** (L.). THE BORDERED WHITE.

- i. Rowland Brown. *Grims Dyke*. (Not since 1887).

The moth is on the wing in May and June ; it can frequently be observed flying round fir trees in the sunshine with great rapidity.

The difference between the male and female of this pretty moth is very marked, as in the case of many of the *Fidoniidae*.

326. **Minoa murinata** (Scop.). THE DRAB GEOMETER.

- i. Carrington. *Oxhey Wood*. (*Teste* Rowland Brown).

This moth, which appears in June, frequents woods.

327. **Aspilates gilvaria** (Fb.). THE STRAW BELLE.

- i. Rowland Brown. *Oxhey Lane*.

The moth appears in August, and can be beaten from low herbage, &c.

ZERENIDAE.

328. *Abraxas grossulariata* (L.). THE CURRANT MOTH.

- i. Melvill.
- ii. Rowland Brown. *Oxhey Lane*.
- iii. Rhoades-Smith.
- iv. Magor. *London Road*.
- v. Bonhote. Very Common.
- vi. Rothschild.

The moth appears in June; it can be beaten from hedges, and also comes to light.

It is noticeable that the colours black and yellow are found in this moth in all its stages. The perfect insect, as well as the larva, is subject to much variation.

329. *Abraxas sylvata* (Scop.). THE CLOUDED MAGPIE.

- i. Bonhote. *L. & N.W. Railway*.

The moth appears in June, and is sometimes found in woods near Wych Elms. (Merrin).

330. *Ligdia adustata* (Schiff.). THE SCORCHED CARPET.

- i. Rhoades-Smith.
- ii. Rowland Brown. *Oxhey Lane*.
- iii. South. *Kingsbury*.

The moth appears in June and frequents spindle. (Merrin). It also comes to light.

Collectors are cautioned not to mistake this moth for *Melanthia ocellata*.

331. *Lomaspilis marginata* (L.). THE CLOUDED BORDER.

- i. Melvill.
- ii. Bond. *Kingsbury and Stanmore*.
- iii. Rhoades-Smith.
- iv. Rowland Brown. *Oxhey Lane*.

The moth is on the wing in June, and frequents woods.

HYBERNIIDAE.

332. *Hybernia rupricapraria* (Hb.). THE EARLY MOTH.

- i. Bond. *Kingsbury* and *Stanmore*.
- ii. Rhoades-Smith.
- iii. Rowland Brown. *Harrow Weald*.
- iv. Rothschild.

The moth appears in January, the male frequenting hedges at dusk. The female of this moth, as indeed of all *Hyberniidae*, has abortive wings.†

333. *Hybernia leucopheararia* (Schiff.). THE SPRING USHER.

- i. Melvill.
- ii. Bond. *Stanmore*.
- iii. Rhoades-Smith.
- iv. Rowland Brown. *Oxhey Lane*.
- v. Rothschild.

The moth appears in February, and flies at dusk round hedges and palings, seeking the female. (Merrin).

334. *Hybernia aurantiaria* (Esp.). THE SCARCE UMBER.

- i. Rhoades-Smith.
- ii. Rowland Brown. *Oxhey Lane*.

The moth appears in October and November, and is found in woods.

335. *Hybernia marginaria* (Bork.). THE DOTTED BORDER.

- i. Bond. *Kingsbury*.
- ii. Rhoades-Smith.
- iii. Rowland Brown. *Oxhey Lane*.
- iv. Rothschild.

The moth is on the wing in February.

† For a key to the so-called wingless females of this as well as all other genera, *vide* chapter on the subject on page 9.

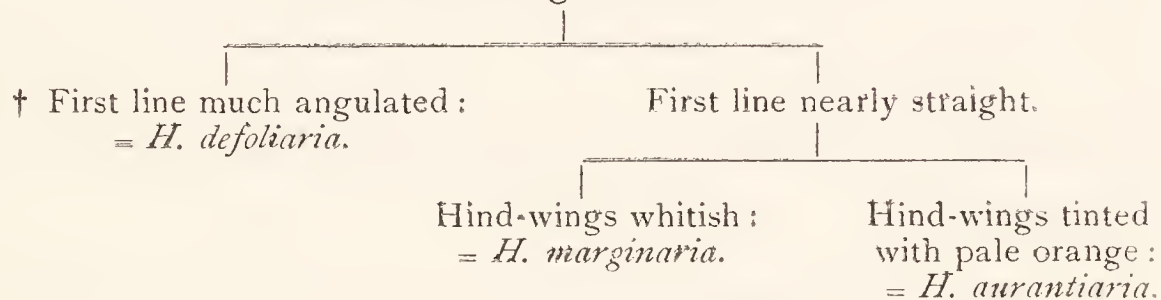
336. *Hybernia defoliaria* (Clerk). THE MOTTLED UMBER.

- i. Melvill.
- ii. Rhoades-Smith.
- iii. Rowland Brown. *Oxhey Lane*.
- iv. Bonhote. "*Ducker*."
- v. Rothschild. Common.

The moth appears in November, and may be found at rest on trees. The males of all this genus are attracted by light.

Key to the genus *Hybernia*, after Stainton (males only).

- I.—Fore-wings brown = *H. rupicapraria*.
- II.—Fore-wings whitish, marbled with grey brown = *H. leucophearia*.
- III.—Fore-wings ochreous.

337. *Anisopteryx aescularia* (Schiff.). THE MARCH MOTH.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. Rhoades-Smith. Common.
- iv. Rowland Brown. *Oxhey Lane*.
- v. Bonhote. *Greenhill*.
- vi. Rothschild. Common.
- vii. Reade. Several.

The moth appears in February and March, and comes freely to light. The female, ‡ which is apterous, may be recognised by the presence of a very conspicuous anal tuft.

† First line, *i.e.*, the line nearest the base of the wing.

‡ For a key to the so-called wingless females of this as well as all other genera, *vide* chapter on the subject on page 9.

LARENTIIDAE.

338. *Cheimatobia brumata* (L.). THE WINTER MOTH.

- i. Melvill.
- ii. Rhoades-Smith.
- iii. Rowland Brown.
- iv. Rothschild. Common.

The moth appears in November, and according to Newman frequents apple orchards in great numbers; it also comes freely to light. It is very common in Harrow town.

**Cheimatobia boreata* (Hb.), the Northern Winter Moth, a species widely distributed in the British Islands, is very like *C. brumata* in both sexes. The male of **C. boreata* has the wings of a paler shade than *C. brumata*. Females of these two moths have abortive wings (vide page 9).

339. *Oporabia dilutata* (Bork.). THE NOVEMBER MOTH.

- i. Rowland Brown. *Oxhey Woods*.
- ii. Rothschild.

The moth appears in October; it can be found at rest on palings and comes readily to light.

A sub-species of this insect, which inhabits birchwoods, being much paler and more glossy than the type, has received the name of **autumnaria* Gn., the Scarce Autumnal. **O. filigrammaria* (H.-S.), the Autumnal Moth, is confined to heaths in the north; it is much smaller than the other two members of the genus.

340. *Larentia didymata* (L.) THE TWIN-SPOT CARPET.

- i. Rhoades-Smith.
- ii. Rowland Brown. *Harrow Weald*.
- iii. South. *Northwood*.

The moth appears in June, and comes to light.

341. *Larentia multistrigaria* (Haw.). THE MOTTLED GRAY.

- i. Bond. *Stanmore and Kingsbury*.
- ii. South. *Northwood*. Common.

The moth appears in March, and may be found at rest on palings.

342. **Larentia viridaria** (Fb.). THE GREEN CARPET.

- i. Bond. *Kingsbury*.
- ii. Rhoades-Smith.
- iii. Rowland Brown. *Oxhey Woods*.

The moth may be beaten from hedges in May and June. It has also been taken at sugar.

The allied **Larentia olivata* Bork, the Beech-green Carpet, can be distinguished from the above-mentioned by the absence of the dark spots on the costa.

343. **Emmelesia affinitata** St. THE RIVULET.

- i. Bond. *Kingsbury*.
- ii. Watts. *Ruislip*. Abundant.

The moth appears in June, and inhabits woods.

344. **Emmelesia alchemillata** (L.). THE SMALL RIVULET.

- i. Rowland Brown. *Harrow Weald*.

The moth is on the wing in June, and frequents woods.

345. **Emmelesia albulata** (Schiff.). THE GRASS RIVULET.

- i. Bond. *Kingsbury*.
- ii. Melvill. *Ruislip*.
- iii. Rowland Brown. *Oxhey Wood*.
- iv. Rhoades-Smith.

This moth may be beaten from Yellow Rattle (*Rhinanthus crisagalli*) in June.

346. **Emmelesia decolorata** (Hb.). THE SANDY CARPET.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. Rowland Brown. *Oxhey Wood*.
- iv. South. *Northwood*.

The moth is on the wing in June, flying at dusk near the flowers of the White Campion.

347. **Emmelesia unifasciata** (Haw.). HAWORTH'S CARPET.

- i. Bond. *Kingsbury*.

The moth appears in June, and has been taken at light.

Key to the genus *Emmelesia*.†

- A. Fore-wings dark.
 - i. A single broad white band crossing them = *E. affinitata* and *E. alchemillata*. (The only difference in the perfect state between these two insects is in size).
 - ii. A distinct broad white band crossing them, and another indistinct band within the first = *E. unifasciata*.
 - iii. A broad ochreous band across the basal portion of the fore-wings = **E. taeniata*.
- B. Wings suffused with white.
 - i. With a distinct dark blotch on the costal margin = **E. adaequata*.
 - ii. No dark blotch on the costal margin = *E. albulata*.
- C. Wings suffused with ochreous.
 - i. *E. decolorata*.
- D. Wings very small with a distinct dark band right across the fore-wings containing a black spot.
 - i. **E. minorata*.

† We have placed the genus *Eupithecia* in a separate chapter.

LARENTIIDAE.

INTRODUCTORY NOTE TO THE GENUS EUPITHECIA.

This genus contains some fifty species, and usually presents great difficulty to the collector. This is chiefly owing to the following facts:—(i.) that many of the species are closely allied; (ii.) that very few works on Entomology even *try* to differentiate the species; (iii.) that many collectors entirely ignore the genus as being too irksome.

Of these fifty species, eighteen are recorded from the *Harrow* district. Of the remaining unrecorded ones, we give on p.p. 38 and 39 a table of full particulars constructed after Mr. Tutt's system in "British Moths," from which work some of our information has been taken.

Contrary to our usual rule we give some notes about lower stages, as these are of the greatest importance in this group.

The imagines of all the species must be sought for in the same ways. (i.) They all come to light and to sugar, and (ii.) rest among or near their food-plants, as on palings, doors, &c. It may be as well to note that when light and sugar are employed a *suitable* locality must be selected.

We append a key to the species, with a few notes on the rarer species and sub-species, and on matters of interest connected with the genus.

348. *Eupithecia linariata* (Fb.). THE TOADFLAX PUG.

i. Bond. Stone Bridge, near *Harrow*.

The Moth appears in June and July. The larva feeds inside the flowers of the toadflax in August.

349. *Eupithecia pulchellata* St. THE FOXGLOVE PUG.

i. Wall. *Grim's Dyke*. (*Teste* Rowland Brown).

The moth appears in May. The larva inhabits the flowers of the foxglove in July.

350. **Eupithecia oblongata** (Thnb.). THE LIME SPECK.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. Rowland Brown. *Oxhey Lane*.
- iv. Rothschild. A few specimens.

The moth is on the wing in June and July. The larva feeds on knapweed, groundsel, and other low plants, resting in the centre of the flower. An occasional specimen *in captivity* emerges in October.

351. **Eupithecia succenturiata** (L.). THE BORDERED LIME
i. Bond. *Kingsbury*. [SPECK.

The moth appears in July and August. The larva can be found in September, feeding by night on mugwort. (J. W. Tutt).

352. **Eupithecia subfulvata** (Haw.). THE TAWNY SPECK.

- i. Bond. *Kingsbury*.
- ii. Rothschild. Rare.

The moth flies in July. The larva is found in October, feeding on the yarrow.

An aberration in which the fore-wings are entirely dark fuscous is called **oxydata* (Tr.).

353. **Eupithecia plumbeolata** (Haw.). THE LEADEN-COLOURED
i. Bond. *Kingsbury*. [PUG.

The moth appears in June. The larva feeds in July and August in the corollas of the Common Cow Wheat.

354. **Eupithecia satyrata** (Hb.). THE SATYR PUG.

- i. Rowland Brown.

The moth is on the wing in April and May. The larva feeds on knapweed, scabious, bedstraw, &c., in June.

355. **Eupithecia castigata** (Hb.). THE GREY PUG.

- i. Bond. *Kingsbury*.
- ii. Melvill.
- iii. Rowland Brown. *Harrow Weald*.

The moth appears in May. The larva feeds on the flowers of various plants in August and September.

356. **Eupithecia fraxinata** Crewe. THE ASH-TREE PUG.i. Bond. *Kingsbury*.

The moth appears in June and July. The larva is found in August and September on ash.

The above record is taken from Stainton's Manual, Vol. II., p. 87, where it is recorded under the name of *innotata*.

357. **Eupithecia nanata** (Hb.). THE NARROW-WINGED PUG.i. Rowland Brown. *Harrow Weald*.

The moth is on the wing in May. The larva can be found in September on heath.

358. **Eupithecia subnotata** (Hb.). THE PLAIN PUG.i. Bond. *Kingsbury*.

The moth appears in July. The larva feeds in September and October on goose-foot and orache.

359. **Eupithecia vulgata** (Haw.). THE COMMON PUG.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. South. *Kingsbury*.
- iv. Rowland Brown. *Harrow Weald*.
- v. Rothschild. Common.

The moth appears in May, June, and July. The larva feeds on golden-rod, knapweed, &c., in August.

360. **Eupithecia absinthiata** (Clerck). THE WORMWOOD PUG.

- i. Bond. *Kingsbury*.
- ii. Luckock. Near *Green Lane*.
- iii. Rothschild.

The moth is on the wing in June and July. The larva feeds on knapweed, groundsel, &c., in August and September.

361. **Eupithecia assimilata** Gn. THE CURRANT PUG.i. Bond. *Kingsbury*.

The moth appears in May and July. The larva feeds on the currant and hop in June and September.

362. **Eupithecia abbreviata** St. THE BRINDLED PUG.i. Bond. *Kingsbury*.ii. Watts. *Pinner Woods*. (*Teste* Rowland Brown).iii. Rowland Brown. *Oxhey Lane*.

The moth appears in April. The larva feeds on oak in June.

363. **Eupithecia dodoneata** Gn. THE OAK-TREE PUG.i. Bond. *Kingsbury*.

The moth appears in April. The larva feeds on oak in June.

364. **Eupithecia exiguata** (Hb.). THE MOTTLED PUG.i. Bond. *Kingsbury*.ii. South. *Kingsbury*.

iii. Rhoades-Smith.

iv. Rothschild. Common.

The moth appears in May and June. The larva feeds on hawthorn in August and September.

The record of **Eupithecia sobrinata* (Hb.), the Juniper Pug, verbally reported, is an error; the specimen which we have examined was taken in June, and belongs to the present species.

365. **Eupithecia coronata** (Hb.). THE V PUG.i. Bond. *Kingsbury*.

The moth appears in May and June. The larva feeds on clematis and bramble in August.

This and the next species belong to a different genus *Chloroclystis*.

366. **Eupithecia rectangulata** (L.). THE GREEN PUG.

i. Melvill.

ii. Bond. *Kingsbury*.iii. Rowland Brown. *Harrow Weald*.

iv. Rothschild. Common.

The moth appears in June, July, and August. The larva feeds in May, in the flowers of the apple and pear.

In London a dark form—the males being quite black—occurs, called sub-sp. **nigrosericeata* (Haw.): in the Harrow district the predominant form is much darker than typical *rectangulata*, but could not be called **nigrosericeata*.

TABLE FOR THE GENUS *Eupithecia*.

Name.	Distribution in Great Britain.	Food Plants.	Times of Appearance.	
			Larva.	Imago.
* <i>venosata</i> ...	Local on the chalk ...	Campion ...	VII.	VI.
* <i>consignata</i> ...	Rare, Hereford and Cambridge ...	Apple and hawthorn ...	VI.	V.
* <i>scabiosata</i> ...	Local ...	Scabious, knapweed & ragwort ...	VIII.-X.	VI.
* <i>pernotata</i> ...	Once, Epping Forest (?) ...	Golden-rod ...	VIII.	VI.
* <i>isogrammaria</i> ...	Generally distributed ...	Clematis (buds) ...	VII.	VI.-VII.
* <i>pygmaea</i> ...	Local, Wicken Fen and Yorkshire ...	Chickweed ...	VII.	VI.
* <i>helveticaria</i> ...	Local, Glasgow and Perth ...	Juniper ...	IX.	IV.-V.
* <i>arceuthata</i> § (?) ...	Local, Bucks, &c. ...	Juniper ..	IX.-X.	VII.
* <i>callunaria</i> § ...	North of England ...	Heather ..	VII.	V.-VI.
* <i>curzoni</i> § ...	Shetland Islands ...	Heather ...	VII.	V.-VI.
* <i>jasionaeata</i> ...	North Devon ...	Small Blue Scabious ...	IX.	VI.
* <i>trisignaria</i> ...	Local, Box Hill and Cambridge ...	Angelica ...	IX.	VI.-VII.
* <i>virgaureata</i> ...	Lake District ...	Golden-rod ...	VIII.-IX.	V.-VI.
* <i>extensaria</i> ...	Local, Kings Lynn salt marshes, and Yorkshire coast.,	Sea-wormwood ...	VIII.-IX.	VI.
* <i>pimpinellata</i> ...	Cambridge, and generally on the chalk ...	Common Burnet Saxifrage	IX.	V.-VI.
* <i>valerianata</i> ...	Widely distributed in marshy places ...	Valerian ...	VIII.	VI.

<i>*pusillata</i>	...	Local, South of England	Spruce-fir	VII.	V.
<i>*irriguata</i>	...	Rare, New Forest and Marlborough	Oak and blackthorn	VI.	IV.-V.
<i>*campanulata</i>	...	Local, Kent and South of England	Nettle-leaved Bell-flower	...	VIII.-IX.	VI.-VII.
<i>*innotata</i>	...	Rare, Kent and Essex coasts	Sea-wormwood	...	VIII.-IX.	VI.-VII.
<i>*indigata</i>	...	Local, South of England and Lake District	Fir and cypress	...	VIII.-IX.	VII.-VIII.
<i>*constrictata</i>	...	Lake District	Wild Thyme	VIII.-IX.	VII.-VIII.
<i>*albipunctata</i>	...	Widely distributed	Wild Angelica	...	IX.	V.-VI.
<i>*expallidata</i>	...	Lake District and Kent	Golden-rod	IX.	VIII.
<i>*minutata</i>	...	Generally distributed	Heath, scabious, &c.	...	VIII.-IX.	VI.-VII.
<i>*knautiata</i> §	...	Lancashire	Scabious	VIII.-IX.	VIII.-IX.
<i>*tenuiata</i>	...	Generally distributed	Sallow (catkins)	...	IV.	VI.-VII.
<i>*subciliata</i>	...	Local, Kent, &c.	Maple	...	V.	VII.
<i>*lariciata</i>	...	Widely distributed	Larch	...	VII.-VIII.	V.-VI.
<i>*sobrinata</i>	..	Local on the chalk downs	Juniper	...	V.-VI.	VIII.-IX.
<i>*stevensata</i> § (?)	...	Rare, Dover	Unknown	...	Unknown	IX.-X.
<i>*togata</i>	Scotland	Fir (cones)	...	VIII.-IX.	VI.
<i>*pumilata</i>	...	Generally distributed	Heath and gorse	...	IV. & VI.	V. & VII.
<i>*debiliata</i>	...	Northern Moors and Devonshire	Bilberry	...	IV.	VI.

Names marked § are sub-species.

NOTES ON THE GENUS EUPITHECIA.

**Eupithecia pernotata* is considered by Mr. Meyrick to be identical with **E. cauchyata* Dup.

**Eupithecia helveticaria*, **E. arceuthata*, and **E. egenaria* H.-S., are considered by some to be the same species; as far as we can ascertain **arceuthata* and **egenaria* are identical, being the southern form of **helveticaria*, but little is known of them.

**Eupithecia curzoni* is—like **callunaria*—a sub-species of *satyrata*; it superficially resembles *nanata*.

**Eupithecia jasionata* is considered by some to be identical with **E. castigata*, but it is probably a distinct species.

Eupithecia fraxinata was formerly confounded with **E. innotata*, a very rare species which it greatly resembles. **E. innotata* is confined in Great Britain to the coasts of Kent and Essex, feeding on the Sea Wormwood, though abroad it also eats the Field Southernwood.

**Eupithecia stevensata* has so far only been taken at Dover, and is probably a sub-species of **sobrinata*. It was originally erroneously recorded as **E. ultimaria* Bdv., a non-British species.

All the members of this genus pass the winter in the pupal state, except **E. sobrinata*, **E. subciliata*, and *E. tenuiata*, with *Chloroclystis* (*Eupithecia*), *rectangulata*, **debiliata*, and *coronata* and **Gymnoscelis* (*Eupithecia*), *pumilata*, all of which pass the winter in the egg.

Key to the genus *Eupithecia*,† adapted from Stainton.

I.—Fore-wings with a few neat transverse lines.

i. Fore-wings with three brown costal blotches = **E. consignata* (Bork.).

ii. Fore-wings with no brown costal blotches = **E. venosata* (Fb.).

II.—Fore-wings tawny and grey.

i. Dark central band narrow = *E. linariata* (Fb.)

ii. Dark central band rather broad = *E. pulchellata* St.

iii. No central band = *E. subfulvata* (Haw.).

† The English names have been omitted.

III.—Fore-wings greenish.

- i. Central band obsolete towards the inner margin, the second line‡ sharply angulated below the costa = *E. coronata* (Hb.).
- ii. Central band complete edged by distinct lines, the second line slightly angulated below the costa = *E. rectangularata* (L.).
- iii. Central band complete edged by rows of dots, the second line indicated by dots = **E. debiliata* (Hb.).

IV.—Fore-wings with a reddish band near the hind margin.

- i. No central spot = **E. pumilata* (Hb.).
- ii. Central spot very large and black = **E. togata* (Hb.).
- iii. Central spot black but not large = **E. pernotata* Gn.

V.—Fore-wings white.

- i. A large grey costal blotch beyond the central spot = *E. oblongata* (Thnb.).

VI.—Fore-wings whitish.

- i. Costa and hind-margin clouded with grey = *E. succenturiata* (L.).
- ii. Costa and hind-margin spotted with dark brown = **E. irriguata* (Hb.).

VII.—Fore-wings grey or brown, sometimes more or less tinged with ochreous or whitish grey.

A. Central spot obsolete.

- i. Fringes checquered, ground colour dark brown = **E. pygmaeata* (Hb.).
- ii. Fringes unicolorous, ground colour dark grey.

Abdomen with the
two basal segments pale :
= **E. isogrammaria* H. & S.

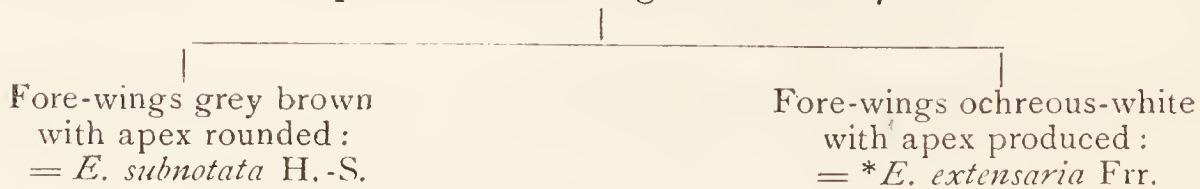
Abdomen unicolorous :
= *E. plumbeolata* (Haw.).

- B. Central spot present, but inconspicuous ; antennal cilia in the male fasciculated = **E. subciliata* Gn.

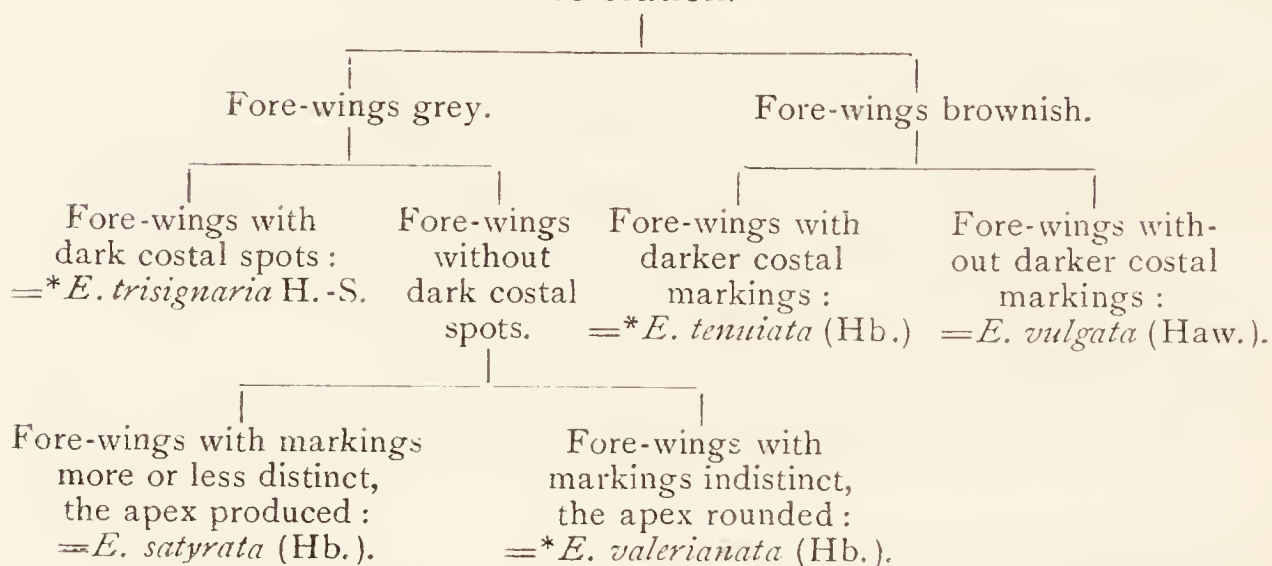
‡ The second line from the base of the wing.

c. Central spot present, but inconspicuous; antennal cilia in the male not fasciculated.

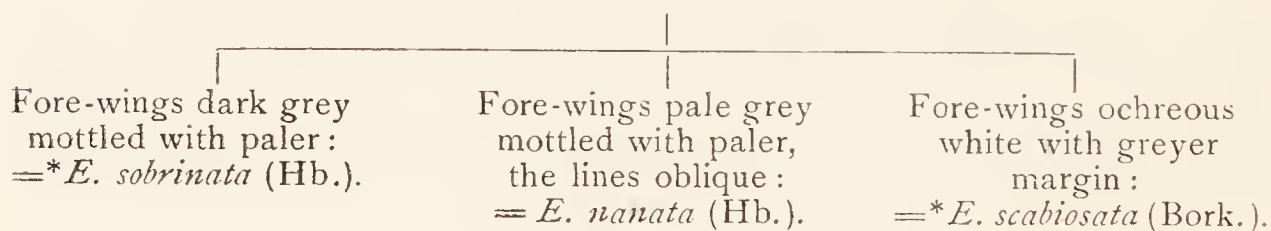
i. Expanse of the wings above $\cdot 827$ of an inch.



ii. Expanse of the wings smaller, fore-wings uniform in coloration.

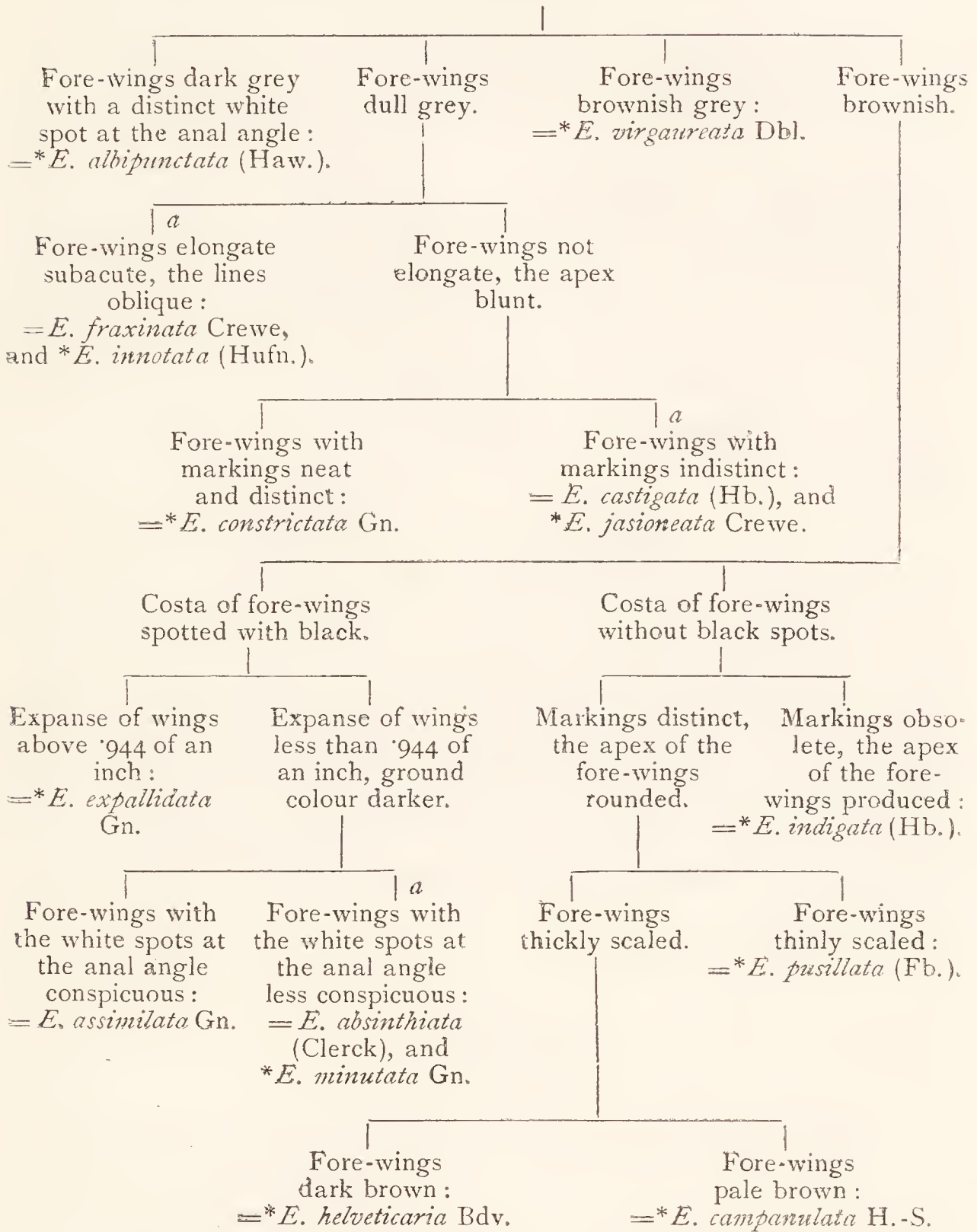


iii. Expanse of the wings as in ii., fore-wings more or less mottled.



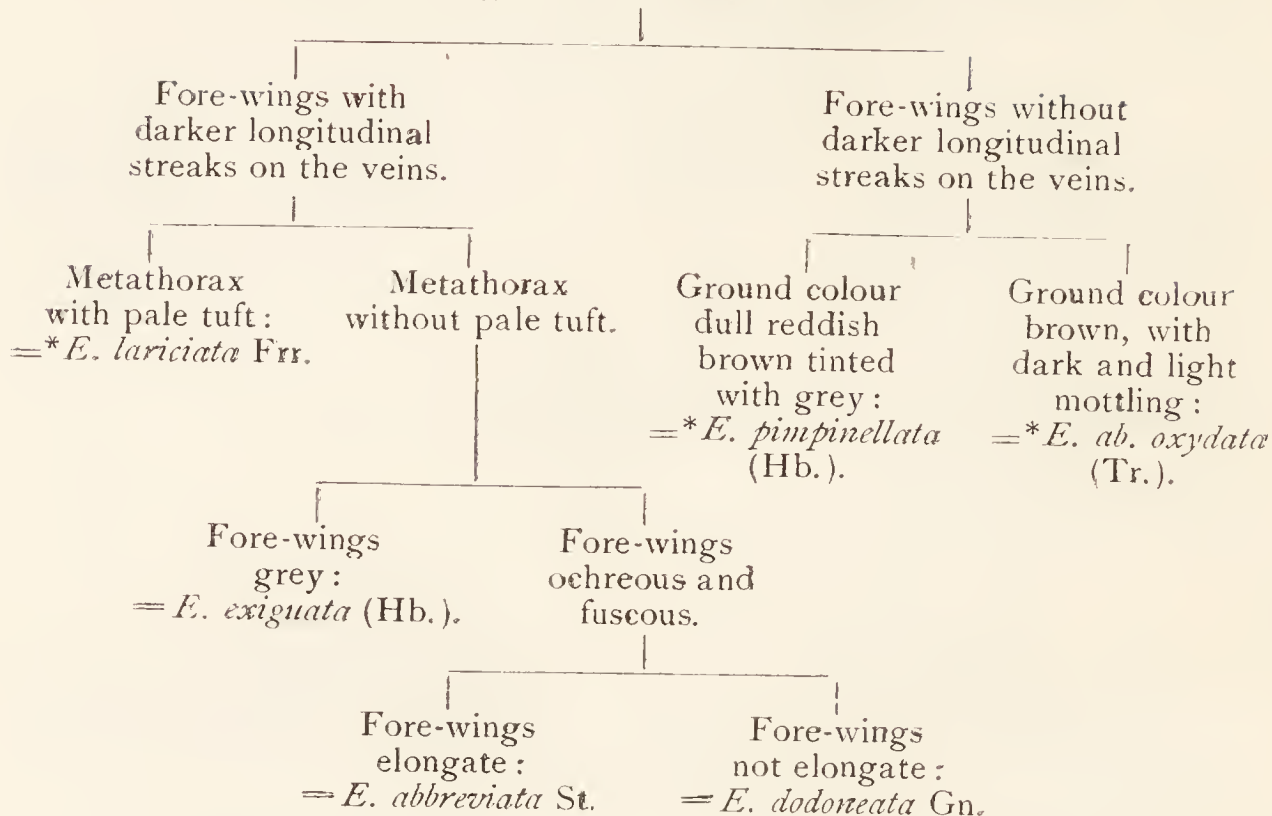
D. Central spot conspicuous.

i. Coloration uniform.



^a These species are so closely allied that we can give no distinctive characters for the imago.

ii. Fore-wings more or less mottled.



The following sub-species have been omitted from the key:—
 **E. arceuthata* (?) Frr., **E. callunaria* Sta., **E. curzoni* Gregs.,
 **E. knautiata* Gregs., and **E. stevensata*. Melanisms of several
 species occur. These are **Eupithecia albipunctata*, ab. **angelicata*
 Barr., and an aberration of *E. satyrata* found near Paisley. Black
 specimens of *E. castigata* and **E. virgaureata* are also recorded,
 besides the previously mentioned aberration of *E. rectangulata*.

LARENTIIDAE.

367. **Lobophora halterata** (Hufn.). THE SERAPHIM.

- i. Bond. *Kingsbury*.
- ii. Rhoades-Smith.

The moth appears on the wing in June, and frequents woods.

There is an aberration called **zonata* (Thnb.) which lacks the markings in the centre of the fore-wings. The *males* of the genus *Lobophora* have a small lobe at the base of the hind-wings.

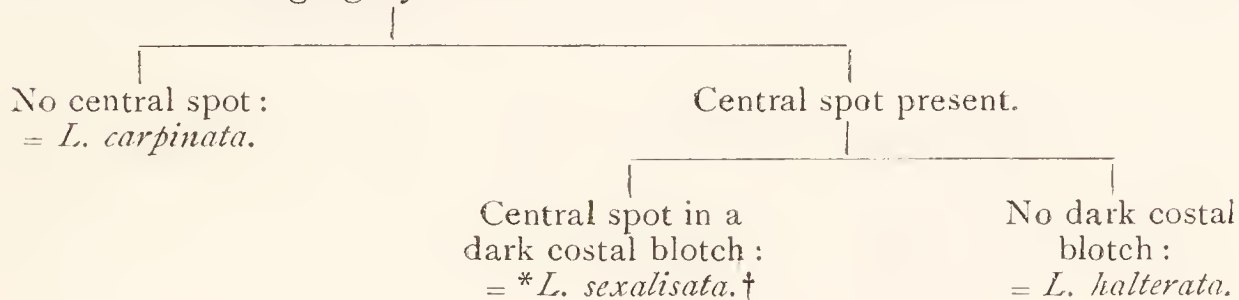
368. **Lobophora carpinata** (Bork.). THE EARLY TOOTH-

- i. Bond. *Kingsbury*. [STRIPED.
- ii. Rowland Brown. *Harrow Weald*.

The moth appears in April, and may often be taken at rest on trees, palings, &c. (Merrin).

Key to the genus *Lobophora*, after Stainton.

- I.—Fore-wings dull green = **L. viretata*.†
- II.—Fore-wings greyish ochreous with a brown central band = **L. polycommata*.†
- III.—Fore-wings grey.

369. **Thera variata** (Schiff.). THE SHADED BROAD BAR.

- i. Rhoades-Smith.
- ii. Rowland Brown.
- iii. Lang. *Ab. obeliscata*.‡

† **Lobophora viretata* (Hb.), the Yellow-barred Brindle, is local ; **L. polycommata* (Hb.), the Barred Tooth-striped, is practically confined to the neighbourhood of Lewes and Folkestone ; and **L. sexalisata* (Hb.), the Small Seraphim, is found in marshy places, but is also local ; it bears a superficial resemblance to members of the genus *Melanippe*.

‡ The form in which the central band is normal on a deep brown ground colour.

The moth is on the wing from June to August, and may be beaten from fir trees.

It may be here remarked that the collector has from this point to deal with the real "carpets," characterised by a dark central band in the fore-wings, though two others of this type have been mentioned before, **Larentia olivata* and *L. viridaria*. The genera of the *Larentiidae* do not admit of tabulation; in fact on the continent the majority of the species are placed in one genus.

370. **Hypsipetes ruberata** (Frr.). THE RUDDY HIGH-FLYER.

i. Bond. *Kingsbury*.

The moth is on the wing in May and June; it can be beaten from hedges.

371. **Hypsipetes trifasciata** (Bork.). THE MAY HIGH-FLYER.

i. Melvill.

ii. Rhoades-Smith.

The moth, as its name indicates, is on the wing in May, and it may also be found, according to some authorities, in July.

Hypsipetes ruberata, the Ruddy Highflyer, can be distinguished by the clearly marked apical streak in its fore-wings.

372. **Hypsipetes sordidata** (Fb.). THE JULY HIGH-FLYER.

i. Melvill.

ii. Godwin. *Kingsbury*.

iii. Watts. *Pinner*.

iv. Rhoades-Smith.

v. Rowland Brown. *Harrow Weald*.

The moth appears in June and July, it may be beaten from hedges, and also comes to light.

This insect is extremely variable. The typical form has the ground colour green; the aberration **infuscata* Stdgr. is brown, and **fusco-undata* (Don.) deep brown with black transverse lines; completely black specimens occur. The present species can be known by the pale patch in the centre of the band before the subterminal line in the fore-wings.

373. *Melanthia bicolorata* (Hufn.). BLUE BORDERED CARPET.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. South. *Kingsbury*.
- iv. Rhoades-Smith.

The moth appears in July, and comes to sugar.

374. *Melanthia albicillata* (L.). THE BEAUTIFUL CARPET.

- i. Watts. *Pinner*.

The moth appears in June; it may be beaten from bramble.

375. *Melanthia ocellata* (L.). PURPLE BAR.

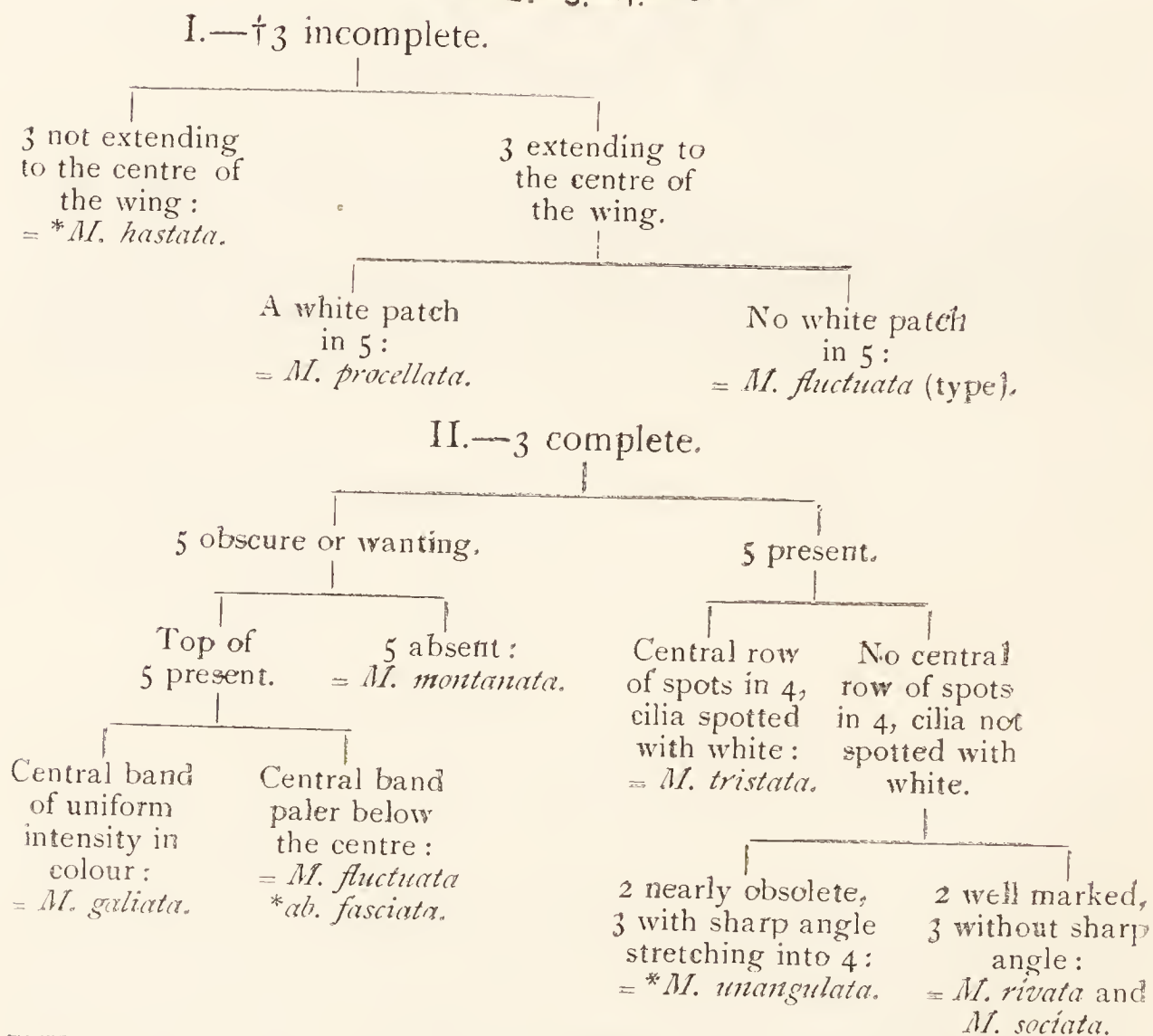
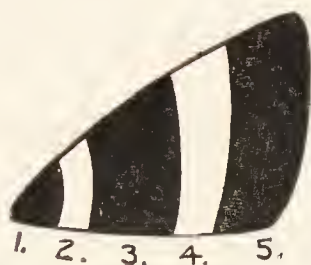
- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. South. *Kingsbury*.
- iv. Rowland Brown. *Harrow Weald*.
- v. Rothschild.

The moth, which is on the wing during the months of May and June, may be taken at light and sugar.

Collectors are cautioned not to mistake this insect for the previously mentioned *Ligdia adustata*, or for a member of the genus *Melanippe*.

INTRODUCTORY NOTE TO THE GENUS MELANIPPE.

This genus contains nine species, of which seven are recorded from the Harrow district. The two unrecorded ones are **Melanippe hastata* (L.), the Argent and Sable, and **Melanippe unangulata* (Haw.), the Sharp-angled Carpet; the former is a fairly common insect in most parts of England; the latter is not uncommon but local.

Key to the genus *Melanippe*.

† The numbers refer to the bands in the figure, which is a diagrammatic representation of the characteristic markings in the fore-wings of all the British species of this genus.

376. **Melanippe tristata** (L.). THE SMALL ARGENT AND SABLE.

- i. Rowland Brown.
- Harrow Weald*
- .

The moth appears in June and July, and is a northern insect, though it is recorded from Gloucestershire.

377. **Melanippe procellata** (Fb.). THE CHALK CARPET.

- i. Rhoades-Smith.

The moth appears in May and June, and may be beaten from clematis.

378. **Melanippe rivata** (Hb.). THE WOOD CARPET.

- i. Rowland Brown.

The moth is *single* brooded, being on the wing in July.

379. **Melanippe sociata** (Bork.). THE COMMON CARPET.

- i. South. *Northwood*. Abundant.
- ii. Rhoades-Smith.
- iii. Rowland Brown. *Grims Dyke*.
- iv. Rothschild.

The moth is *double* brooded, appearing in May and at the end of July ; it may be found at rest on palings, and also comes to light.

We can give no *distinctive* characters for this and the preceding species. Specimens from the Hebrides are brown, having a superficial resemblance to *Larentia didymata*. (Tutt.).

380. **Melanippe montanata** (Bork.). THE SILVER-GROUND

- i. Melvill. [CARPET.
- ii. Bond. *Kingsbury*.
- iii. Rhoades-Smith.
- iv. Rowland Brown.
- v. Bonhote.
- vi. Rothschild.

The moth appears in May, and can be beaten from hedges.

381. **Melanippe galiata** (Hb.). THE GALIUM CARPET.

- i. Melvill.

The moth is on the wing in June, and can be obtained by beating. (Merrin).

382. *Melanippe fluctuata* (L.). THE GARDEN CARPET.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. Rhoades-Smith.
- iv. Rowland Brown. *Harrow Weald*.
- v. Rothschild.

The moth appears in May and again in August; it can be found at rest on walls, and also comes to light.

This insect is subject to some variation. An aberration in which the central band is complete is called **fasciata*, while the aberration with the ground colour dark is, according to Mr. Tutt, **ab. neapolisata*; another aberration occurs with the ground colour ochreous.

383. *Anticlea badiata* (Hb.). THE SHOULDER STRIPE.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. Rowland Brown. *Oxhey Lane*.

The moth may be found frequenting sallows in April. It flies at dusk, and comes to light. (Merrin).

384. *Anticlea nigrofasciaria* (Göze.). THE STREAMER.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. Watts. *Pinner*.
- iv. Rowland Brown.
- v. Bonhote. *Green Lane*.
- vi. Rothschild. 1895.

The moth appears in April, and comes to light.

385. *Coremia designata* (Hufn.). THE FLAME CARPET.

- i. Bond. *Kingsbury*.
- ii. Rhoades-Smith.
- iii. Rothschild. *The Grove*.

The moth appears in May and June, and may often be found at rest on trees.

Allied to this insect is **Coremia munitata* (Hb.), the Red Carpet, a northern insect; it can be distinguished from *C. designata* by the grey apical streak at the tip of its fore-wings.

386. **Coremia ferrugata.** (Clerck). THE RED TWIN-SPOT
 i. Melvill. [CARPET.
 ii. Bond. *Kingsbury*.
 iii. Rowland Brown. *Harrow Weald*.

The moth is on the wing in May and August. It may be beaten from hedges, and has also been taken at light.

The previously mentioned **Emmelesia taeniata* bears a superficial resemblance to this moth.

387. **Coremia unidentaria.** (Haw.). THE DARK BARRED
 i. Melvill. [TWIN-SPOT CARPET.
 ii. Bond. *Kingsbury*.
 iii. Rhoades-Smith.
 iv. Rowland Brown. *Harrow Weald*.
 v. Rothschild.

This moth is double brooded, appearing in May and again in August.

Allied to this species is **Coremia quadrifasciaria* (Clerck), the Large Twin-spot Carpet, which can, however, be distinguished by the presence of a distinct black dot in the centre of the transverse band of the fore-wings; it is a local species, having been taken in Cambridgeshire and Kent.

388. **Camptogramma bilineata** (L.). THE YELLOW SHELL.
 i. Melvill.
 ii. Rhoades-Smith.
 iii. Rowland Brown. *Harrow Weald*.
 iv. Bonhote. Exceedingly abundant.
 v. Rothschild.

This moth, which is on the wing about mid-summer, frequents hedgerows, from which it may be beaten. It also comes to light.

**Camptogramma fluviata* (Hb.), the Gem, is a local species, the best known localities for it being in Wales.

389. **Phibalapteryx tersata.** (Hb.). THE FERN.
 i. Rowland Brown. *Harrow Weald*.

The moth appears in June and July. It may be beaten from clematis. (Merrin).

390. **Phibalapteryx vitalbata.** (Hb.). THE SMALL WAVED
i. Rhoades-Smith. [UMBER.

The moth is double brooded, appearing in May and again in August. It frequents clematis.

Three other species of the genus *Phibalapteryx* have occurred in the British Islands; **P. polygrammata* (Bork.), the Many-lined, was formerly taken near Burwell Fen, Cambridge, but is now extinct; **P. vittata* (Bork.), the Oblique Carpet, frequents marshy spots such as Wicken Fen; and **P. lapidata* (Hb.), the Slender Striped Rufous, is a northern insect.

391. **Triphosa dubitata** (L.). THE TISSUE.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. Rowland Brown. *Harrow Weald*.
- iv. Rothschild.

The moth is on the wing in August, appearing again after hibernation in April and May. It comes freely to light.

392. **Eucosmia certata.** (Hb.). THE SCARCE TISSUE.

- i. Godwin. *Kingsbury*.

The moth appears in May and June. It can be found at rest on palings, and also comes to light. (Merrin).

The narrow central band distinguishes this insect from the previously named one.

393. **Scotosia vetulata.** (Schiff.). THE BROWN SCALLOP.

- i. Bond. *Kingsbury*.
- ii. Godwin. *Kingsbury*.

The moth, which flies about mid-summer, may be beaten from buckthorn.

394. **Scotosia rhamnata.** (Schiff.) THE DARK UMBER.

- i. South. *Kingsbury*.
- ii. Rowland Brown. *Pinner*.
- iii. Lang.

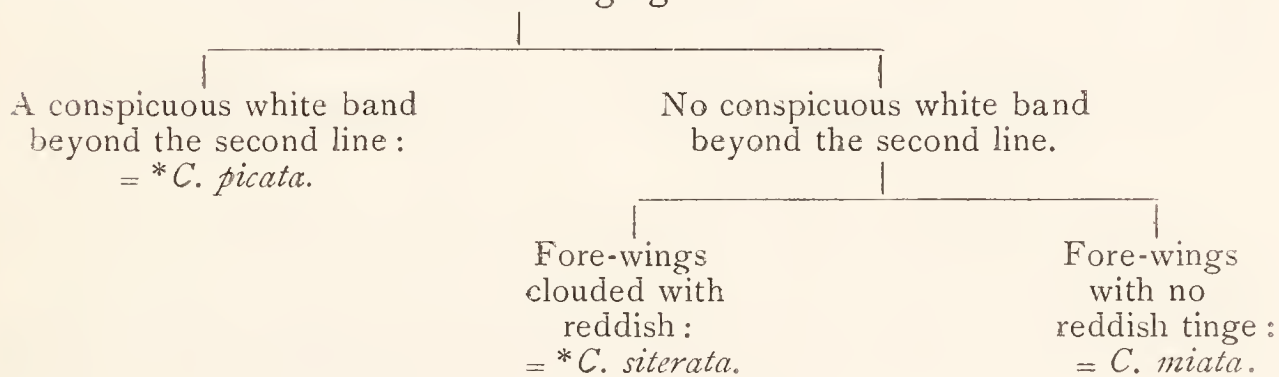
This moth frequents buckthorn in June and July. It also comes to light.

INTRODUCTORY NOTE TO THE GENUS CIDARIA.

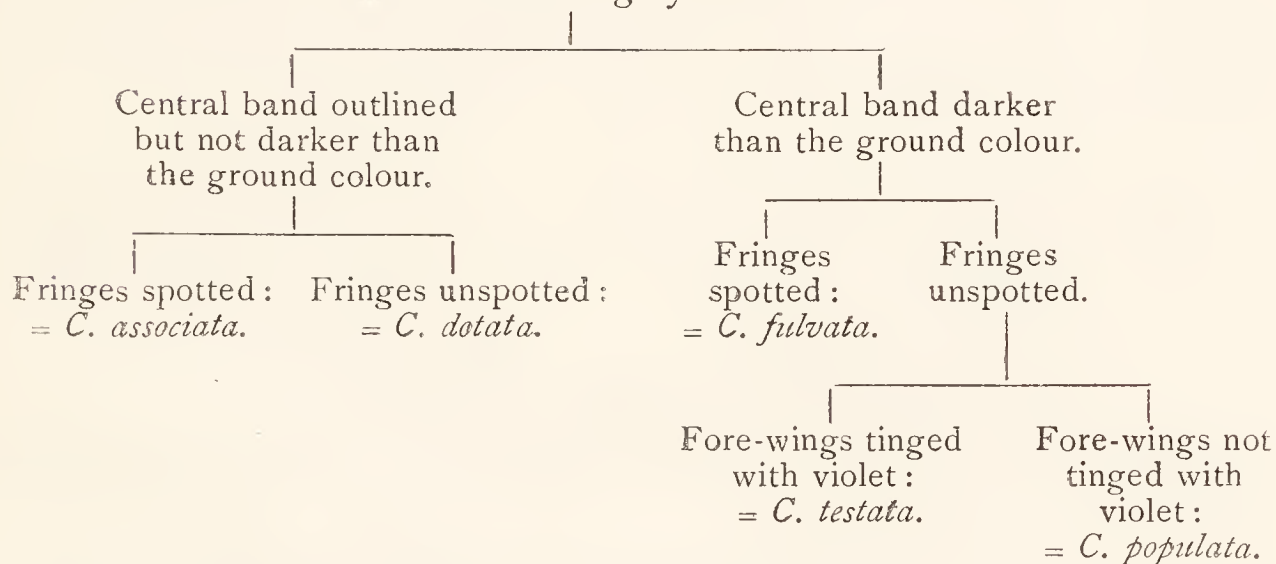
The genus *Cidaria* contains 16 British species, of which 12 are recorded from the Harrow district; of the remaining four, **Cidaria sagittata* (Fb.), the Marsh Carpet, is confined to the Cambridgeshire Fens; **C. reticulata* (Fb.), the Netted Carpet, is only found in the Lake district, and is rare *there*; **C. siterata* (Hufn.), the Red-green Carpet, is generally distributed and may occur in the Harrow district; and **C. picata* (Hb.), the Short-cloak Carpet, is widely distributed in the south.

Key to the genus *Cidaria*, after Stainton.

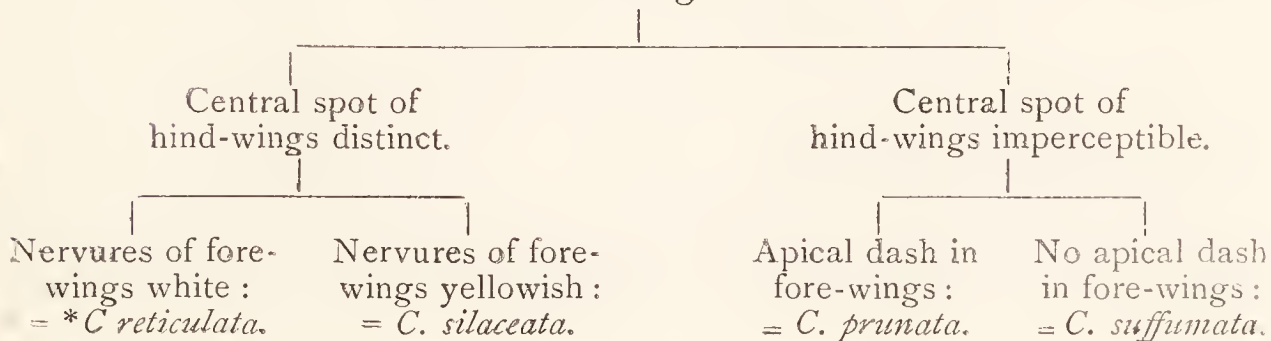
I.—Fore-wings green.



II.—Fore-wings yellow.



III.—Fore-wings brown.



IV.—Fore-wings reddish with the base and central band black
= **C. sagittata*.

V.—Fore-wings olive-grey or of varied colours = *C. corylata*,
C. truncata, and *C. immanata*.

395. ***Cidaria miata***. (L.) AUTUMN GREEN CARPET.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. Rhoades-Smith.
- iv. Rowland Brown. *Oxhey Lane*.
- v. Bonhote. *Green Lane*.
- vi. Rothschild.

The moth appears in September, coming freely to ivy blossom and light. The impregnated females hibernate. (Newman).

396. ***Cidaria corylata*** (Thnb.). THE BROKEN-BARRED

- i. Bond. *Kingsbury*. [CARPET.

The moth appears in May and June, and can be found at rest on tree trunks.

The *typical* form has the central band incomplete; aberrations, however, with a complete central band and with the band obsolete occur. The latter is called **albocrenata* Curt., the White-blotched Carpet. The white apical spot distinguishes this species from the two succeeding ones.

397. ***Cidaria truncata*** (Hufn.). THE COMMON MARBLED

- i. Melvill. [CARPET.
- ii. Bond. *Kingsbury*.
- ii. Rhoades-Smith.
- iii. Rowland Brown. *Harrow Weald*.

The moth appears in June and August; it can be beaten from hedges, and comes to light.

398. ***Cidaria immanata*** (Haw.). DARK MARBLED CARPET.

- i. Rhoades-Smith.

The moth is on the wing in July, and can be beaten from hedges. It is common in the north.

The pale line that crosses the centres of the hind-wings on the underside is sharply angulated in *immanata* and rounded in *truncata*. (Tutt.).

399. **Cidaria suffumata** (Hb.). THE WATER CARPET.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. Rhoades-Smith.
- iv. Rowland Brown. *Harrow Weald*.
- v. Rothschild.

The moth is on the wing in March and April, and flies at dusk, coming to light.

A sub-species of this insect called **piceata* (St.), the Pitchy Carpet, is found in the north; it has the ground colour of the fore-wings a uniform brown all over without a distinct central band.

400. **Cidaria silaceata** (Hb.). THE SMALL PHOENIX.

- i. Bond. *Kingsbury*.

The moth is on the wing in May and August. It comes to light.

401. **Cidaria prunata** (L.). THE PHOENIX.

- i. Bond. *Kingsbury*.
- ii. Lang.

The moth is on the wing in July and August, and comes to light.

402. **Cidaria testata** (L.). THE CHEVRON.

- i. Melvill.
- ii. Rhoades-Smith.
- iii. Rowland Brown. *Harrow Weald*.
- iv. Lang.

The moth appears in July. It may be taken at light and sugar.

403. **Cidaria populata** (L.). THE NORTHERN SPINACH MOTH.

- i. Rhoades-Smith.
- ii. Rowland Brown. *Harrow Weald*.

The moth may be taken at light in July.

404. **Cidaria fulvata** (Forst.). THE BARRED YELLOW.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. Rhoades-Smith.
- iv. Rowland Brown. *Harrow Weald*.
- v. Rothschild.

The moth is found in June and July, when it may be beaten from hedgerows. It also comes to light.

405. **Cidaria dotata** (L.). THE BARRED STRAW.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. Rhoades-Smith.
- iv. Rowland Brown. *Harrow Weald*.

The moth may frequently be taken at light in July.

This species is the *Cidaria pyraliata* of Newman.

406. **Cidaria associata** (Bork.). THE SPINACH.

- i. Bond. *Kingsbury*.
- ii. Rhoades-Smith.

The moth appears in July, frequenting the outskirts of woods. (Merrin).

This species is the *Cidaria dotata* of Newman.

407. **Pelurga comitata** (L.). THE DARK SPINACH.

- i. Rowland Brown. *Harrow Weald*.
- ii. Rothschild. *The Grove*.

The moth is on the wing in July and August, and comes freely to light.

The genus *Pelurga* may be distinguished from *Cidaria* by the horny rounded anterior dorsal prominence on the thorax. (Meyrick).

EUBOLIIDAE.

408. **Eubolia cervinata** (Schiff.). THE MALLOW.

i. Rhoades-Smith.

The moth appears in September.

409. **Eubolia limitata** (Scop.). THE SMALL MALLOW.

i. Melvill.

ii. Bond. *Kingsbury*.

iii. Rhoades-Smith.

iv. Rowland Brown. *Harrow Weald*.

v. Rothschild. *L. & N.W. Railway Bank*.

The moth appears in June and July, frequenting grassy places in woods.

410. **Eubolia palumbaria** (Fb.). THE BELLE.

i. Rhoades-Smith.

ii. Rowland Brown. *Harrow Weald*.

The moth appears in June and comes to light. (Merrin).

This species may be distinguished from *E. limitata* by its greyer colour, and by having the central band dark-edged and not of a uniform colour.

411. **Anaitis plagiata** (L.). THE TREBLE-BAR.

i. Bond. *Kingsbury*.

The moth is on the wing in July and August, and comes to light.

SIONIDAE.

412. **Tanagra atrata** (L.). THE CHIMNEY SWEEP.

- i. Melvill.
- ii. Bond. *Kingsbury*.
- iii. Rhoades-Smith.
- iv. Rowland Brown.
- v. Rothschild. *L. & N.W. Railway Bank*.

The moth appears in June. It may be found flying in the sunshine in grassy places, especially on railway banks.

PYRALIDES.

PYRALIDIDAE.

INTRODUCTORY NOTE TO THE PYRALIDES.

The family *Pyralides* contains 72 moths distributed among 28 genera. The majority of the species are distinct and easy to identify, though the members of the genera *Botys* and *Scoparia* are rather difficult. About a dozen of the species are rare, but the majority are *locally* abundant; a few species swarm everywhere. In this group, as in the previously mentioned genus *Eupithecia*, we give notes on the lower stages, as they are of great importance. A monograph on the family has been written by Mr. Leech.

413. *Aglossa pinguinalis* (L.). THE TABBY.

- i. Bond. *Kingsbury*.
- ii. Rowland Brown. *Grim's Dyke*.
- iii. Rothschild. Common.

The moth is on the wing in June and July. It frequents stables, outhouses, &c.

An aberration called **streatfieldi* Curt., Streatfield's Tabby, has grey fore-wings with two dark bands and a black central spot. (Leech).

414. *Aglossa cuprealis* (Hb.). THE SMALL TABBY.

- i. Bond. *Kingsbury*.

The moth is on the wing in July, and has the same habits as the previously mentioned *pinguinalis*. The larva feeds on the refuse in old mills and barns during the winter.

The hind-wings of the present species are much lighter than those of *A. pinguinalis*, and the fore-wings redder.

415. *Pyralis costalis* (Fb.) THE GOLD FRINGE.

- i. Bond. *Kingsbury*.
- ii. Prior.
- iii. Rowland Brown. *Grim's Dyke*.
- iv. Rhoades-Smith.
- v. Rothschild.

The moth appears in July and August. It is generally found settled on walls and palings, and also comes to light.

The larva feeds on hay, which accounts for the presence of the imago in London suburbs. In America it is said to do great damage to clover-hay.

416. ***Pyralis farinalis* L.** THE MEAL MOTH.

- i. Bond. *Kingsbury*.
- ii. Rhoades-Smith.
- iii. Rothschild. Rare.

The moth is on the wing from June to September. It may be frequently found at rest in outhouses, &c.

Allied to this insect is **Pyralis lienigialis* Zell., Zeller's Pyrale, a rare species in Great Britain, a few specimens having been taken at Stony Stratford, Bucks. The red-brown tint and the transverse lines forming a triangular blotch on the costa distinguish it from *P. farinalis*.

417. ***Pyralis glaucinalis* L.** THE DOUBLE-STRIPED.

- i. Bond. *Kingsbury*.
- ii. Rowland Brown. *Oxhey Lane*.

The moth is on the wing from June to September. It may be beaten from thatch and comes to light. (Merrin). We have disturbed it from undergrowth in the day time.

It may be bred from the twiggy branches that are so often met with on old birch trees.

INTRODUCTORY NOTE TO THE GENUS SCOPARIA.

The genus *Scoparia* contains, according to the "Entomologist" List, twenty British species, of which five are recorded from the Harrow district. Of these twenty species five have a very slender claim to specific rank; i.e., **Scoparia zelleri* Wk., **S. ingratella* (Zell.), **S. phaeoleuca* (Zell.), and **S. atomalis* Dbl. **S. conspiciualis* Hodgk. is the same insect as **S. ulmella* (Dale). Of the nine species that are unrecorded from this district **S. murana* (Curt.), the Wall Grey, is a common species, possibly overlooked in the Harrow district; **S. basistrigalis* Knaggs, the Mottley Grey, is a rare species which has lately been taken in numbers near Dartford Heath; **S. lineolea* (Curt.), the Line Grey, is not uncommon but local;

**S. resinea* Haw., the Resin Grey, is also local; **S. ulmella* Dale, the Lichen Grey, is a rare insect first taken near East Meon; it may be recognised at once by its silky appearance. **S. truncicolella* (Sta.), the Serrated Grey, is a fairly common species frequenting fir-woods; **S. angustea* (St.), the Narrow Grey, is equally abundant; **S. alpina* (Dale), the Alpine Grey, is an exclusively northern species, and **S. pallida* (St.), the Pale Grey, is a local marsh-frequenting insect. **Scoparia ingrattella* is a sub-species of *dubitalis*, being taken among other places at Folkestone (Leech). **S. phaeoleuca* is a good sub-species of *S. mercurella* found at Portland. **S. zelleri* is an aberration of **S. cembrae*, likewise **S. scotica* White, taken near Perth with the typical form. **S. gracilalis* is a dark aberration of **S. alpina*; and **S. atomalis* is a northern sub-species of *S. ambigualis*.

418. **Scoparia ambigualis** (Tr.). THE SMALL BROWN GREY.

- i. Bond. *Kingsbury*.
- ii. Rowland Brown.

The moth appears in June and July. It may be found at rest on trees.

The northern sub-species **S. atomalis* can be distinguished from the typical form by being smaller and darker. **S. basistrigalis* differs from *ambigualis*, according to Mr. Leech, by its deeper markings, larger size, and different shape.

419. **Scoparia cembrae** Haw. THE LARGE GREY.

- i. Rhoades-Smith.

The moth frequents fir-trees and fields (Leech) in June and July. It appears that the type is attached to chalk.

**S. zelleri* is an aberration differing from the type by being larger and more strongly marked. **S. scotica* is larger and lighter than the type. (Leech).

420. **Scoparia dubitalis** (Hb.). THE HOARY GREY.

- i. Bond. *Kingsbury*.

The moth frequents marshy spots in June and July. (Leech).

**S. ingrattella* is a larger and paler insect than the type. (Leech).

421. **Scoparia mercurella** (L.). THE COMMON GREY.i. Bond. *Kingsbury*.

The moth may be found at rest on walls and stones in July and August.

**S. phaeoleuca* differs from *mercurella* in having the margins and bases of the fore-wings almost white, an adaptation to its chalky environment, as is the case also with **ingratella*.

422. **Scoparia crataegella** (L.). THE HAWTHORN GREY.i. Bond. *Kingsbury*.

The moth may be beaten from whitethorn and old lichen-covered hedges, in which the larva feeds, in June and July.

423. **Nomophila noctuella** (Schiff.). THE UBIQUITOUS.i. Bond. *Kingsbury*.

The moth appears in July and August. It may be kicked up from long grass, &c., at the roots of which the larva feeds on moss.

424. **Pyraustra purpuralis** (L.). THE CRIMSON AND GOLD.i. Bond. *Kingsbury*.ii. Rothschild. *L. & N.W. Railway Bank*, near Wooden Bridge.

The moth appears in May and July. It frequents railway-banks, grassy slopes, &c.

**Pyraustra ostrinalis* (Hb.) is considered by some to be an aberration and by others a sub-species of the present species, and it differs from it in having the band in the fore-wings entire and not composed of spots. We have taken numbers of **ostrinalis* in a locality where *purpuralis* could *never* be found, and we have taken them flying together. It is supposed the form **ostrinalis* occurs only in the South of England, and is a South European form.

425. **Endotricha flammealis** (Schiff.) THE ROSY FLOUNCED.i. Bond. *Kingsbury*.

The moth appears in June and July, frequenting woods. The larva feeds on decaying leaves throughout the winter.

BOTYDAE.

426. **Eurrhynx urticata** (L.). THE SMALL MAGPIE.

- i. Rowland Brown. *Grim's Dyke and Oxhey Lane.*
- ii. Rhoades-Smith.
- iii. Rothschild.

The moth appears in June and July, frequenting nettles; it also comes to light.

427. **Scopula olivalis** (Schiff.) THE OLIVE PEARL.

- i. Bond. *Kingsbury.*

The moth appears in June and July. It frequents lanes, coming to light. The larva feeds on various hedgerow plants, like the next species, in April.

428. **Scopula prunalis** (Schiff.) THE DUSKY PEARL.

- i. Bond. *Kingsbury.*
- ii. Rowland Brown. *Grim's Dyke.*
- iii. Rothschild. *The Grove.*

The moth appears in June and July, frequenting hedges, &c.

INTRODUCTORY NOTE TO THE GENUS BOTYS.

The genus *Botys* contains ten species, of which three are recorded from the Harrow district. Of the seven unrecorded ones, **Botys nubilalis* (Hb.), the (so-called) Hop Pearl, is exceedingly rare in Great Britain and not a native; **B. repandalis* (Schiff.), the Scarce Pearl, is also a great rarity, having been taken in Devonshire; **B. pandalis* (Hb.), the Bordered Pearl, is a common species probably overlooked in the Harrow district; **B. asinalis* (Hb.), the Madder Pearl, is a local species; **B. terrealis* Tr., the Brown Pearl, is widely distributed but local; **B. lancealis* (Schiff.), the Narrow-winged Pearl, and **B. flavalis* (Schiff.), the Orange Pearl, are chiefly found on the coast.

The rarity or common occurrence of the Pearls seem to be merely the result of the restricted range or general distribution of their food plants. Thus *B. ruralis* feeds on the common Nettle, and is of universal occurrence. **B. asinalis* and **B. terrealis* are addicted to

Golden-rod; **B. lancealis* to Hemp Agrimony, both local plants, and the moths must be sought for among them. **B. nubilalis* probably feeds on maize, and is an importation.

429. **Botys hyalinalis** (Hb.). THE STRAW PEARL.

i. Rowland Brown. *Oxhey Lane*.

The moth appears in July, frequenting open spots in woods. (Leech).

Closely allied to this insect is **Botys pandalis* (Hb.), the Bordered Pearl; it can be distinguished from the present species by being smaller and having the stigmata less distinct.

430. **Botys ruralis** (Scop.). THE MOTHER OF PEARL.

i. Rowland Brown. *Oxhey Lane*.

ii. Rhoades-Smith.

iii. Rothschild. Common.

The moth appears in June and July. It can be beaten from nettles, on which the larva feeds, in May.

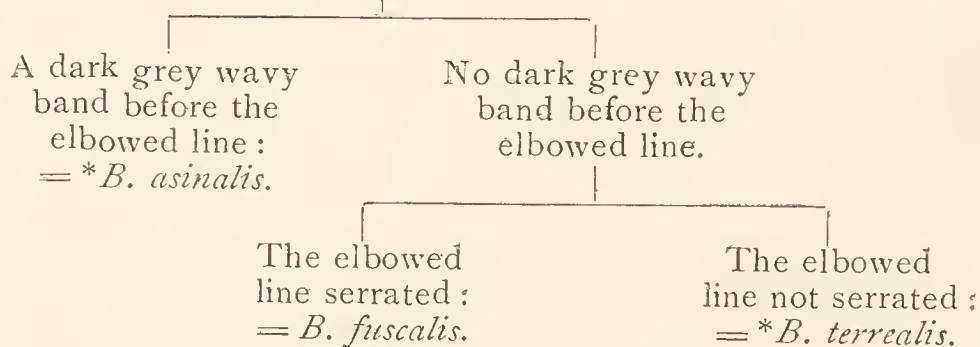
431. **Botys fuscalis** (Schiff.). THE DINGY PEARL.

i. Rowland Brown. *Grims Dyke*.

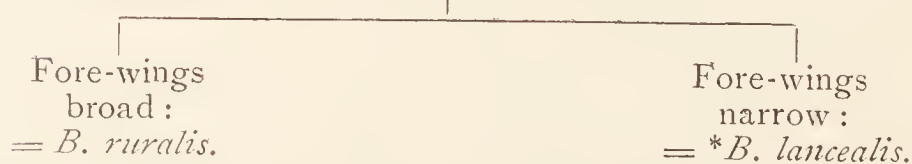
The moth is on the wing in June, frequenting marshy spots. (Merrin). The larva feeds on the Common Yellow Rattle in August.

Key to the genus *Botys*,† after Stainton.

I.—Fore-wings dark grey.

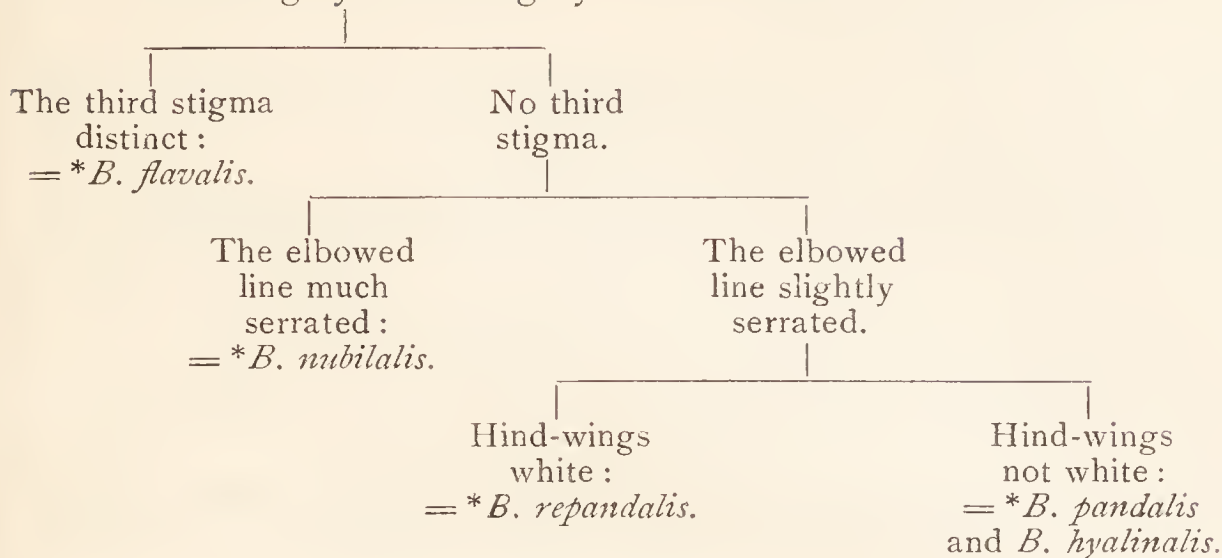


II.—Fore-wings dingy grey.



† Collectors are cautioned not to confuse *Spilodes verticalis* with the members of this genus.

III.—Fore-wings yellowish grey or whitish straw colour.

432. *Ebulea crocealis* (Hb.). THE OCHREOUS PEARL.i. Bond. *Kingsbury*.

The moth appears in June and July, frequenting marshy spots.

The larva feeds on fleabane, feeding in spring, while the majority of the Pearls feed up in autumn, passing the winter fullfed, and pupating in the spring, shortly before emergence.

433. *Ebulea sambucalis* (Schiff.). THE ELDER PEARL.

- i. Bond. *Kingsbury*.
- ii. Rowland Brown. *Oxhey Lane*.
- iii. Rhoades-Smith.
- iv. Rothschild. 1894.

The moth appears in June and August. It may be beaten from hedges, and be found at rest on palings.

434. *Ebulea stachydalis* (Zinck.). THE WOUNDWORT PEARL.

- i. Bond. *Kingsbury*. At light.
- ii. Carrington. *Pinner*. Larva. (Vide Entomologist, 1880, p. 124.)

The moth appears in June, and can be beaten from Hedge Woundwort, on which the larva feeds, in August. It is a rare and local species, confined to the South of England.

The present species can be distinguished from *E. sambucalis* by its smaller size, blunter fore-wings, and yellower spots.

435. **Spilodes stieticalis** (L.). THE DIAMOND PEARL.

i. Rhoades-Smith.

The moth appears in July and August frequenting rough and uncultivated ground. (Leech).

It is only common, and even there of uncertain appearance, on the Breck Sands of Norfolk and Suffolk.

436. **Spilodes verticalis** (L.). THE YELLOWISH PEARL.i. Bond. *Kingsbury*.

The moth appears in July and August, frequenting clover fields. (Leech). The larva feeds on Papilionaceae in May.

437. **Pionea forficalis** (L.). THE GARDEN PEARL.i. Bond. *Kingsbury*.ii. Rowland Brown. *Grim's Dyke*.

iii. Rothschild. Common.

The moth appears in June and August. It frequents gardens, coming freely to light. The larva feeds on horseradish and other Cruciferæ in July.

HYDROCAMPIDAE.

The females of this family are larger than the males, and usually differently marked.

Key to the *Hydrocampidae*.

- I.—Hind-wings with an ocellated black band near the hind margin = *Cataclysta*.
- II.—Hind-wings without an ocellated black band near the hind margin.
 - A. Fore-wings marked with white = *Hydrocampa*.
 - B. Fore-wings not marked with white = *Paraponyx*.

438. ***Cataclysta lemnata* (L.).** THE SMALL CHINA MARK.

- i. Rowland Brown. *Grim's Dyke*.
- ii. Rothschild. Ponds in *the Football Fields*.

The moth is on the wing from June to August. It flies at dusk or just before, over duck-weed covered ponds.

439. ***Paraponyx stratiotata* (L.).** THE RINGED CHINA MARK.

- i. Rowland Brown. *Grim's Dyke*.

The moth is on the wing during the Summer, it flies over water at dusk. (Merrin).

440. ***Hydrocampa nymphaeata* (L.).** THE BROWN CHINA

- i. Bond. *Kingsbury*. [MARK.]
- ii. Rowland Brown. *The Hall, Pinner*.
- iii. Rhoades-Smith.

The moth appears in June and July, flying over water at dusk.

441. ***Hydrocampa stagnata* (Don.).** THE BEAUTIFUL CHINA

- i. Bond. *Hendon*. [MARK.]

The moth appears in June and July, and flies over water at dusk.

The present species may be recognised from *H. nymphaeata*, as the yellow hind-margin of each wing is preceded by an *uninterrupted* white band. (Stainton).

442. **Acentropus niveus** (Oliv.).† THE WATER MOTH.

i. Bond. *Hendon*.

The moth appears in July and August, flying over water.
The female has abortive wings, vide p. 9.

† Olivier thought it was a *Neuropterous* insect, and so called it *Phryganea niveus*.

PTEROPHORI.

PTEROPHORIDAE.

INTRODUCTORY NOTE TO THE PTEROPHORIDAE.

The *Pterophoridae* or "*Plumes*" are a very well defined group of moths, containing as regards Great Britain 33 species (Tutt); of these, eight only are recorded from the Harrow District. In the present volume we have only treated the family more or less superficially, and those collectors who are anxious to study the family must procure Mr. Tutt's excellent work on the subject, which contains all the required information.

The larvae are generally hairy.

443. **Cnaemidophorus rhododactylus** (Fb.). THE ROSE
i. Bond. *Kingsbury*. [PLUME.†

The moth is on the wing in July and beginning of August. It frequents woods and hedge-rows and also comes to light. The larva feeds on the buds of the wild rose. (Tutt).

This insect was formerly abundant in some parts of England, but is now seldom if ever taken. It might, however, turn up in its old locality again, and is well worth looking for.

444. **Amblyptilia acanthodactyla** (Hb.). THE BEAUTIFUL
i. Bond. *Kingsbury*. [PLUME.

The moth, which hibernates, may be taken in July and August. It can be beaten from rest-harrow, broom, geranium, &c., on the flowers of which the larva feeds in June and August.

445. **Mimaeseoptilus bipunctidactyla** (Haw.). THE GREY
i. Bond. *Kingsbury*. [WOOD PLUME.

The moth is on the wing from May to October. It frequents fields, woods, &c. (Tutt.). The larva feeds on the flowers of the scabious in May and June.

† The English names for the "*Plumes*" have been taken from "*British Moths and their Transformations*," by H. N. Humphreys and J. O. Westwood, 1845.

446. **Mimaeseoptilus pterodactylus** (L.). THE BROWN
 i. Bond. *Kingsbury*. [WOOD PLUME.
 ii. Rothschild. *L. & N. W. Railway Banks*.

The moth appears in June and July, and frequents grassy slopes. The larva feeds on speedwell in June.

This insect was formerly called by many authors, *fuscus*.

447. **Pterophorus monodactylus** (L.). THE COMMON PLUME.
 i. Bond. *Kingsbury*.
 ii. Rowland Brown. *Harrow Weald*.

The moth, which hibernates, may be found in June and July; it frequents grassy slopes, hedges, &c. (Tutt). The larva feeds on convolvulus and other low-growing plants in June and July.

This insect was formerly called by many authors, *pterodactylus*.

448. **Aciptilia galactodactyla** (Hb.). THE SPOTTED WHITE
 i. Bond. *Kingsbury*. [PLUME.

The moth appears in June and July. It frequents woods, resting among burdock, on which the larvae feed in May in small companies.

449. **Aciptilia pentadactyla** (L.). THE LARGE WHITE PLUME.
 i. Bond. *Kingsbury*.
 ii. Rowland Brown. *Harrow Weald*.
 iii. Rothschild. *L. & N. W. Railway Banks*. Common.

The moth appears in June and July, frequenting hedges and grassy slopes. The larva feeds on convolvulus in May.

ALUCITIDAE.

450. *Alucita hexadactyla* (L.). THE SIX-CLEFT PLUME.

- i. Bond. *Kingsbury*.
- ii. Rowland Brown. *Oxhey Lane*.
- iii. Rothschild. *The Grove*.

The moth, which hibernates, may be taken in June and July, in gardens and houses. The larva feeds in the tubes of honey-suckle flowers in June.

SUPPLEMENT TO VOL. I.

RHOPALOCERA.

p. 2, No. 6. **Colias hyale.**

The "Entomologist's Record" has pointed out that the time of appearance is given for this species in Vol. I. incorrectly. The authors consequently point out that the words from "*appearance*" to "*given*" should be omitted, and the following substituted:—"When this butterfly occurs in the British Islands it is on the wing in August, the parent brood having come over to this country in May and June."

p. 3, No. 7. **Colias edusa.**

x. Rothschild. A few specimens were taken in the district in 1894 and '95.

p. 3, No. 8. **Gonopteryx rhamni.**

vi. Rowland Brown. *Pinner* and *Harrow Weald*.
Usually a few.

p. 4, No. 11. **Argynnis paphia.**

iv. Bridgewater. July, 1893. One specimen.

p. 4, No. 12. **Melitaea aurinia.**

Mr. Tutt states, "British Butterflies," p. 332, that this insect was formerly common near *Neasden*.

p. 5, No. 14. **Vanessa polychloros.**

vii. Prior. 1858 and 1870.

p. 6, No. 17. **Vanessa antiopa.**

iii. Prior. *Dudley Lodge, Roxeth.* 1872.

In Stainton's Manual, vol. i., p. 39. Bond's record is also mentioned.

p. 8, No. 22. **Pararge megaera.**

- iv. Rowland Brown. *L. & N.W. Railway Bank*,
beyond *Pinner Station*.

p. 10, No. 28. **Thecla w-album.**

- ii. Rowland Brown. A second specimen was taken
in 1895 by Mr. Peers in the same place as
mentioned in vol. i.

p. 10, No. 29. **Thecla quercus.**

- iii. Rowland Brown. *Oxhey Wood*. 1892.

p. 11, No. 33. **Lycaena astrarche.**

- ii. Rowland Brown. *Grims Dyke*. (Some years
ago).

p. 12, No. 35. **Lycaena corydon.**

- iii. Lang. 1887.

p. 12, No. 36. **Lycaena argiolus.**

- iii. Prior. Common in gardens. 1868 and 1871.
- iv. Rowland Brown. *Harrow Weald*. Occasionally.

p. 13, No. 39. **Hesperia thaumas.**

- v. Rowland Brown. *Harrow Weald Common*.

HETEROCERA.

p. 15, No. 42. **Acherontia atropos.**

iv. Prior. *Lower Road, Roxeth.* June, 1863. One specimen.

p. 15, No. 43. **Sphinx convolvuli.**

iv. Prior. *Woodlands, High Street.* July, 1864.

v. Bond. *Kingsbury.*

p. 16, No. 45A. **Choerocampa celerio** (L.). THE SILVER-STRIPED
[HAWK-MOTH.

i. Rowland Brown. *Harrow Weald Churchyard.*
1892. One specimen.

The moth has usually been found in this country in September and October. It comes to a strong light, and has been found at rest on walls, windows, &c.

This moth is a rarity in the British Islands, though it is distributed all over the temperate and tropical portions of the old world, and the specimens which have been secured are probably immigrants, though several larvae have been found from time to time.

p. 16, No. 45B. **Choerocampa porcellus** (L.). THE SMALL ELE-
[PHANT HAWK-MOTH.

i. Rowland Brown. *Harrow Weald Common.*

The moth appears in May and June. It frequents honey-suckle and other flowers at early dusk, and occasionally comes to sugar.

p. 17, No. 50. **Macroglossa fuciformis** (L.). THE BROAD-
[BORDERED BEE HAWK-MOTH.

i. Bond. *Kingsbury.* Recorded by Mr. Bond himself in an interleaved copy of Stainton's Manual. (*Teste* S. Webb).

ii. Rhoades-Smith. *Eastcote Woods.* 1895. Vide Entomologist, 1895, p. 223. This specimen was examined by N. C. Rothschild shortly after its capture.

- p. 18, No. 50A. **Macroglossa bombylifformis** (Och.). THE
[NARROW-BORDERED BEE HAWK-MOTH.
i. Bond. *Kingsbury*. Common. Vide Stainton's
Manual, vol. i., p. 100.

The above two paragraphs, the former of which has been re-written from Vol. I., contain all the information about these two moths as regards the Harrow district. As we pointed out in Vol. I. a confusion has arisen about the synonymy of these two moths, and we gave what was *then* considered to be the correct names. Since that time a controversy has been going on in the "Entomologist" about this point, and it now seems that the names we gave are wrong, but the correct names have not yet been ascertained. The ambiguity is strongly brought home to readers of the present volume when it is considered that the specimen taken by Mr. P. Rhoades-Smith was *wrongly* considered by him to be the Narrow-bordered species, which according to his list should stand as *fuciformis*. Under this name his brother, Mr. C. Rhoades-Smith, recorded it, applying the name to the Broad-bordered species. Mr. Lewis Prout, "Entomologist," 1896, p. 41, quotes this record to prove a point in his argument, also believing the insect to be the Narrow-bordered species. This was finally contradicted by the junior author, "Entomologist," 1896, p. 124.

- p. 19, No. 52. **Sesia tipuliformis**.
iv. Bond. *Kingsbury*.

- p. 19, No. 53. **Sesia myopiformis**.
ii. Bond. *Kingsbury*.

- p. 20, No. 53A. **Sesia formiciformis** (Esp.). THE RED-TIPPED
i. Bond. *Kingsbury*. [CLEARWING.]

The moth is on the wing in June and July. It frequents willows and osiers, in which trees the larva feeds.

- p. 29, No. 74A. **Spilosoma fuliginosa** (L.). THE RUBY TIGER.
i. Prior. *Roxeth Mead, Roxeth*. At light.
ii. Rowland Brown. *Harrow Weald*.

The moth appears in June. It frequents marshy spots, coming freely to light.

p. 30, No. 78. **Hepialus hectus.**iii. Prior. *Roxeth Mead, Roxeth.* 1865-66. Several.p. 35, No. 87. **Trichiura crataegi.**

iii. Rhoades-Smith. 1894.

p. 36, No. 91. **Bombyx rubi.**

Delete record iv. The larvae were purposely imported.

p. 36, No. 92. **Bombyx quercus.**iii. Rowland Brown. *Harrow Weald Common.*p. 37, No. 94. **Lasiocampa quercifolia.**

Delete record iv.

p. 38, No. 95A. **Drepana falcataria** (L.). THE PEBBLE HOOK-i. Rowland Brown. *Oxhey Lane.* At light. [TIP.

The moth appears in May and August. It may be beaten from birch.

p. 39, No. 98. **Dicranura furcula.**

iii. Prior. 1869 and 1871.

p. 39, No. 99. **Dicranura bifida.**ii. Bond. *Kingsbury.*p. 40, No. 102. **Lophopteryx camelina.**

iii. Prior. 1876.

iv. Reade. *The Grove.* Two specimens. 1895.p. 40, No. 103A. **Notodonta dictaeoides** (Esp.) THE LESSER
[SWALLOW PROMINENT.i. Wall. *Grim's Dyke.* (Teste Rowland Brown).

The moth appears in May and June. It can be found at rest on palings, &c.

p. 40, No. 104. **Notodonta ziczac.**

ii. Prior. 1871.

p. 41, No. 105A. **Pygaera curtula** (L.). THE CHOCOLATE TIP.

i. Prior. 1876.

The moth appears in May and July. It may be found at rest on palings and poplar trees.

p. 42, No. 108A. **Asphalia diluta** (Fb.). THE LESSER LUTE-

i. Rowland Brown. *Harrow Weald*. [STRING.

The moth appears in August and September.

p. 42, No. 108B. **Asphalia flavicornis** (L.). THE YELLOW

i. Rowland Brown. *Harrow Weald*. [HORNED.

The moth appears in March. It may be found at rest among birch.

Members of the genus *Asphalia* have the eyes *hairy*, while they are smooth in the genus *Cymatophora*; a strong lens, however, is required to ascertain this fact.

p. 45, No. 110. **Bryophila muralis**.

The record of **Brophila impar* from Cork is an error; the species has not been taken there.

The first line in the fore-wings of *perla* reaches the inner margin, while in *muralis* it does not. (Meyrick).

p. 46, No. 113. **Acronycta tridens**.

iii. Rothschild. 1895. One larva.

p. 46, No. 115. **Acronycta aceris**.

v. Rhoades-Smith. 1896. Several.

p. 46, No. 116. **Acronycta megacephala**.

ii. Prior. 1865.

P. 49. ADDITIONAL NOTES ON THE LEUCANIIDAE.

**Synia musculosa* and **Leucania loreyi* have, according to Mr. Tutt, a very slender claim to be considered British at all.

**L. littoralis* (Curt.), should be **L. littoralis* Curt.

**Leucania obsoleta* is still found in some of the Thames marshes (Tutt), and also sparingly at Ely.

**Senta maritima* is still found in the Norfolk Broads (Tutt), and also at Ely.

Some forms of **Coenobia rufa* have a strong superficial resemblance to **Nonagria neurica*.

**Tapinostola extrema* is reported by those who know its restricted locality to be on the verge of extinction.

**Nonagria sparganii* is better described as being taken near Ashford, in Kent, and also at Deal.

**Nonagria cannae* is still taken in the Norfolk Broads.

p. 51, No. 120. **Leucania lithargyria.**

Closely allied to this insect are the previously mentioned **Leucania extranea* and **L. albipuncta*. The former may be known by its very distinct apical streak and pointed wings, and the latter by having the reniform dot-like as opposed to the curved linear one of *lithargyrea*. (Meyrick's distinction).

p. 51, No. 121. **Leucania comma.**

iii. Rothschild. 1895.

p. 51, No. 122. **Leucania impura.**

The closely allied **Leucania straminea* is as yet unrecorded from the Harrow district, though the authors know of a locality for it within twenty miles. It frequents reed beds, and may be distinguished from *L. impura* by the post-median black marks in the hind-wings. (Meyrick's distinction).

p. 52, No. 124. **Tapinostola fulva.**

The previously mentioned **T. hellmanni* and **T. extrema*, the former of which like *T. fulva* ranges in colour from smoky white to red-brown, are very closely allied to that species. **T. hellmanni* is larger and has squarer fore-wings than the other two, which have elongate fore-wings. **T. extrema* lacks to a great extent (in the few specimens we have examined) the darker nervures which occur in the light forms of *fulva*.

p. 52, No. 126. **Nonagria geminipuncta.**

The only record of this insect is an error. Colonel Barclay tells us that he did not take the species; it should, however, occur in the district. The presence of the larvae or pupae of insects in the interior of reeds and other plants can be detected by the *centre* leaf

being brown and dead. The plants should be cut off *close* to the *ground*, when usually the thin tissue covering the hole intended for the escape of the imago can be discovered a few inches up the stem, and the top of the reed cut off above this. The pupae should be kept damp either inside the reed or on moss. If the inhabitant happens to be a larva the cutting should be placed in water.

p. 53, No. 127. **Gortyna ochracea.**

iii. Prior. 1867.

p. 54, No. 131. **Xylophasia rurea.**

iv. Prior. 1865.

As we previously pointed out, the identification of the *Noctuae* is no easy task. A large number of collectors fail to distinguish with ease between numbers of the genera *Xylophasia*, *Mamestra*, *Apamea*, and *Hadena*. As far as we know, no really satisfactory treatise of the *Noctuae* has yet appeared which answers *all* purposes, but we give below a few notes which it is hoped will clear up some few of the difficulties, but at the same time refer our readers to Mr. Tutt's previously mentioned work.

The following species are seen to have the eyes hairy, when viewed under a strong lens :—

Mamestra brassicae, *M. persicariae*, and *M. albicolon*.

The first two of these species, Nos. 145 and 146 in Vol. I., are unmistakable, **M. albicolon* has a resemblance to *M. furva*, No. 144, and **M. abjecta*.

**Hadena glauca*, *H. dentina*, *H. trifolii*, *H. dissimilis*, *H. pisi*, *H. oleracea*, *H. thalassina*, **H. contigua*, and **H. genistae*.

The first two species can be distinguished from each other by **glauca* lacking the black basal dash.

H. trifolii, No. 234, bears a strong resemblance to some forms of *A. gemina*, No. 148, especially the one called by Mr. Tutt, *ab. rufescens*; it also resembles *Mamestra furva*, No. 144, and *M. sordida*, No. 143, in a less degree. Some specimens have the orbicular stigmata coloured pale grey, *much paler* than the *ground* colour.

H. pisi can be distinguished from *oleracea*, No. 135, by its much broader subterminal line, which lacks the "teeth" which occur in *oleracea*.

H. thalassina, No. 236, and **H. contigua* may be known from one another by the former having the space between the elbowed line and the subterminal line of the dark ground colour. (Stainton).

**H. genistae* bears a strong resemblance to some forms of *A. gemina*, No. 148.

The following species have the eyes *glabrous*, i.e., without hairs:—

Xylophasia rurea, *X. lithoxylea*, *X. sublustris*, *X. monoglypha*, *X. hepatica*, and *X. scolopacina*.

X. rurea, No. 131, can be known from *X. hepatica*, No. 135, by its very indistinct subterminal line.

Some forms of *X. rurea*, No. 131, resemble *A. gemina*, No. 148, but can generally be recognised by the much darker hind-margin. *X. hepatica*, No. 135, sometimes resembles *H. adusta*, No. 231; the latter may be recognised by having the first and second lines joined by a black sub-medium dash. (Meyrick).

We have not been able to examine a specimen of **Xylophasia zollikoferi* with a lens, to ascertain about its eyes. The only specimens we have seen were in the collection of Dr. Staudinger, and had a very strong superficial resemblance to **Calamia lutosa*.

**Hadena atriplicis* is an unmistakable insect.

Hadena protea, No. 232, is also readily distinguished by the green tinge of its fore-wings.

**H. rectilinea* is another very distinct species.

H. adusta, No. 231, as previously mentioned, resembles *X. hepatica*, No. 135.

H. porphyrea is easily known by its large size and large dark blotch below the stigmata.

Mamestra sordida, No. 143, resembles some forms of *Apamea basilinea*, No. 147; the latter, however, is more mottled.

**Mamestra abjecta* is fairly distinct.

Mamestra furva, No. 144, is exceedingly like *A. gemina*, No. 148. Mr. Meyrick distinguishes them by the median teeth of the subterminal line in *furva* reaching the termen (posterior hind-margin of the wing), while in *gemina* they do not.

Apamea gemina, No. 148, as previously mentioned, resembles *Hadena trifolii*, from which it differs by the *glabrous* eyes; **Hadena genistae*, from which it differs in the same way; *Xylophasia rurea*, No. 131, which has a much darker hind-margin; and *Mamestra furva*, No. 144.

**A. connexa* is quite unmistakeable.

A. unanimitis, No. 149, can be distinguished from *didyma*, No. 151, by having the hind margin of the reniform stigma white, which is not the case in *A. gemina*.

A. ophiogramma, No. 150, can always be known from some of the

forms of *A. didyma*, which it resembles, by the pale thorax with a dark line in front.

It may be as well to mention here that doubtfully British species have been omitted.

p. 54, No. 133. **Xylophasia sublustris.**

ii. Prior. 1865.

p. 55, No. 137. **Dipterygia scabriuscula.**

iii. Prior. 1865.

p. 57, No. 142a. **Luperina cespitis** (Fb.). THE HEDGE RUSTIC.

i. Rhoades-Smith. 1894.

The moth appears in September. It comes freely to light.

p. 56, No. 142. **Luperina testacea.**

iii. Bond. *Kingsbury*.

p. 57, No. 142. ***Luperina guenéei** is a sub-species and not an aberration of *L. testacea*.

p. 58, No. 148. **Apamea gemina.**

ii. Rothschild. 1895.

iii. Bridgwater. 1894.

p. 58, No. 150. **Apamea ophiogramma.**

ii. Rothschild. *The Grove*. At light. (June 27, 1895).

p. 58, No. 152. **Miana strigilis.**

The five species of the genus *Miana* are extremely puzzling. *M. literosa*, No. 154, is not a variable species, and is easily known from all the other species by its very grey colour tinged with rosy, and by having the reniform stigma black outlined on the edge nearest the base of the wing *only*. In some specimens the inner edge of the pale band beyond the middle is straight.

M. arcuosa, No. 156, has a much more slender appearance than any of the other species. The male is pale ochreous all over the female has some darker markings on the wings.

M. strigilis, No. 152, has the reniform stigma black outlined on both edges, and the outer edge of the central band *curved*.

M. fasciuncula, No. 153, has the reniform stigma indistinct, not black outlined at all, and the central band curved on the outer edge.

M. bicoloria, No. 155, is extremely variable; some specimens have the reniform dark outlined on the edge nearest the base of the wing, while many specimens have the outer edge of the central band straight. A form in which no stigmata and no central band are present occurs, the fore-wings being of a uniform pale ochreous colour. Another form has the reniform obsolete, a circular patch taking its place.

p. 61, No. 158. **Grammesia trigrammica.**

v. Prior. 1865. Ab. bilinea.

p. 62, No. 163. **Rusina tenebrosa.**

ii. Bond. *Kingsbury*.

P. 63. INTRODUCTORY NOTE TO THE GENUS AGROTIS.

The genus *Agrotis* contains twenty-one †British species, of which eight are recorded from the Harrow District; of the remaining thirteen, **Agrotis candelarum* Stdgr., sub-sp. **ashworthii* Dbl., Ashworth's Rustic, is an extremely local species, found near Llangollen, in Wales; **Agrotis lunigera* St., the Crescent Dart; **A. cinerea* (Hb.), the Light-feathered Rustic; **A. cursoria* (Bork.), the Coast Dart; **A. obelisca* (Hb.), the Square-spot Dart; **A. lucerneae* (L.), the Northern Rustic; **A. ripae* (Hb.), the Sand Dart; **A. praecox* (L.), the Portland Moth; **A. simulans* (Hufn.), the Dotted Rustic; and **A. vestigialis* (Hufn.), Archer's Dart, are all *coast* insects, though the latter is found on the Breck Sands of Norfolk and Suffolk. **A. obscura* (Brahm), the Stout Dart, is a local species which may occur in the Harrow District.

p. 64, No. 169. **Agrotis corticea.**

ii. Rothschild. 1895.

iii. Rowland Brown. *Oxhey Lane*.

† **Agrotis fennica* (Tausch.), Eversmann's Rustic, has occurred *once* in Derbyshire.

p. 64, No. 171. **Agrotis nigricans.**

- ii. Bond. *Kingsbury.*
- iii. Rothschild.

This moth is much rarer in the Harrow district than might be expected.

P. 64. INTRODUCTORY NOTE TO THE GENUS NOCTUA.

**Noctua ditrapezium* (Bork.), the Triple-spotted Clay, was accidentally omitted in Vol. I. It is a local species occurring in the Isle of Wight, the New Forest, and Tilgate Forest.

The English name for **Noctua conflua* is the Shetland Ingrailed; the Lesser Ingrailed being the name of the Northern form of *N. festiva*.

p. 64, No. 178. **Noctua festiva.**

- ii. Rhoades-Smith. 1895.

p. 64, No. 179. **Noctua rubi.**

- ii. Rothschild. 1895.

p. 64, No. 181. **Noctua baia.**

The black apical streak distinguishes this insect at a glance.

p. 68, No. 186. **Triphaena orbona.**

This species has not been taken in the Harrow district.

p. 69, No. 192. **Mania maura.**

- iv. Prior. 1865.

p. 70, No. 193A. **Pachnobia leucographa** (Hb.). THE WHITE-
[MARKED.

- i. Peers. *Harrow Weald.* (*Teste* Rowland Brown).

The moth appears in March and April, frequenting tallows. (Merrin).

p. 71, No. 196. **Taeniocampa populeti.**

The typical form of this moth has two small black dots preceding the subterminal line.

p. 71, No. 198. **Taeniocampa gracilis.**ii. Rowland Brown. *Harrow Weald Common.*

An aberration of this moth occurs in which the ground colour is a rich brown.

p. 71, No. 200. **Taeniocampa munda.**

An aberration of this moth occurs in which the two black spots on the wing are *obsolete*.

p. 72. Key to the genus *Taeniocampa*.

Stainton's key to this genus is unsatisfactory, as it only applies to certain cases. All the species vary to such an extent that it seems quite impossible to give satisfactory characters. *T. incerta*, No. 195, is the largest of the genus; *T. gracilis*, No. 198, can be known by the row of black dots in the hind-wings; *T. miniosa*, No. 199, by the white hind-wings; and *T. pulverulenta*, No. 201, by its small size and very indistinct subterminal line. The other species do not seem to have any *constant* distinctive characters.

p. 72, No. 202. **Orthosia upsilon.**

This insect bears a superficial resemblance to *Noctua augur*.

p. 74, No. 209. **Cerastis vaccinii.**

v. Rothschild. 1894. Common.

p. 74, 210. **Cerastis spadicea.**

iv. Rothschild. 1894. Common.

p. 74, No. 212. **Xanthia citrargo.**iv. Rowland Brown. *Harrow Weald.*p. 75, No. 213. **Xanthia fulvago.**

iv. Rhoades-Smith. 1895.

p. 75, No. 213A. **Xanthia flavago** (Fb.). THE PINK-BARREDi. Rowland Brown. *Grims Dyke.* [SALLOW.]

The moth appears in August and September. It comes freely to sugar.

p. 75, No. 214. **Xanthia aurago.**ii. Rowland Brown. *Harrow Weald.*

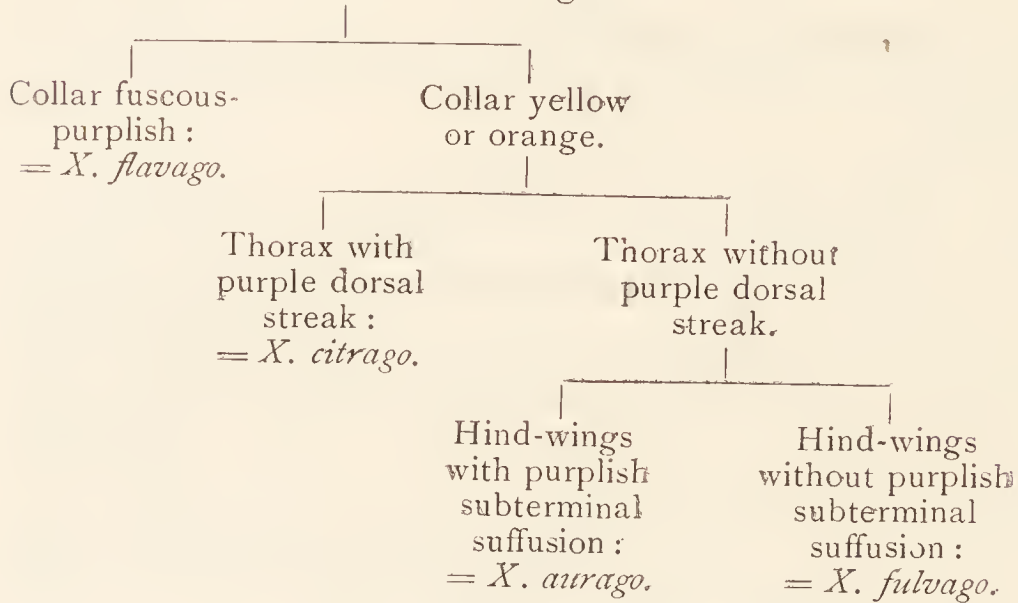
p. 75, No. 215. **Xanthia gilvago.**

ii. Rowland Brown. *Harrow Weald.*

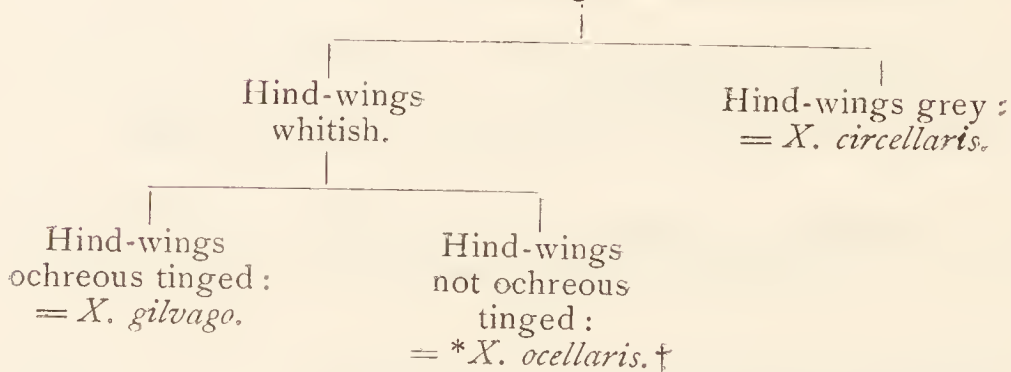
iii. Rhodes-Smith. 1895.

Key to the genus *Xanthia*, adapted from Meyrick.

I.—Fore-wings yellow or orange.



II.—Fore-wings ochreous brown.



p. 76, No. 217. **Tethea subtusa.**

iii. Prior.

iv. Rowland Brown. *Harrow Weald.*

p. 76, No. 217A. **Tethea retusa** (L.). THE DOUBLE KIDNEY.

i. Rowland Brown. *Oxhey Lane.* At sugar.

The moth appears in July and August. It comes to light and sugar.

p. 76, No. 219. **Calymnia pyralina.**

It seems that the insect is of regular occurrence near the town every year. In 1895 eight specimens at least were secured.

† **Xanthia ocellaris* (Bkh.), the Pointed Sallow, a rare species recently added to the British list.

- p. 78, No. 221A. **Dianthoecia capsicola** (Hb.). THE LYCHNIS.
i. Rhoades-Smith. 1895.

The moth appears in June. It frequents lychnis.

- p. 78, No. 221B. **Dianthoecia cucubali** (Fuess.). THE CAMPION.
i. Rowland Brown. *Harrow Weald*.

The moth appears in June. It flies in the sunshine near lychnis. (Merrin).

- p. 78, No. 221C. **Dianthoecia carpophaga** (Bork.). THE TAWNY
i. Rowland Brown. *Harrow Weald*. [SHEARS.

The moth appears in June. It comes to flowers and light.

- p. 78, No. 224. **Polia flavicineta**.

**P. xanthomista* has the hind-wings in the male *white* and in the female *grey*. It differs from *P. flavicineta* in having the hind-wings of a uniform colour and not of two different shades.

- p. 80, No. 230. **Trigonophora flammea**.

Delete the only record.

- p. 80, No. 230A. **Aplecta nebulosa** (Hufn.). THE GREY ARCHES.
i. Rowland Brown. *Oxhey Wood*.
ii. Rhoades-Smith. 1895 and 1896.

The moth appears in June. It comes to light and sugar.

- p. 80, No. 230B. **Aplecta advena** (Fb.). THE PALE SHINING
i. Bond. *Kingsbury*. [BROWN.

The moth appears in June. It comes to sugar and flowers, and may also be found at rest.

- p. 81, No. 234A. **Hadena pisi** (L.). THE BROOM-MOTH.
i. Bond. *Kingsbury*.

The moth appears in June, and comes to light and sugar.

- p. 82, No. 242. **Xylinia socia**.

This insect is a rarity at the present time ; it is now chiefly found in Wales. Colonel Hanbury-Barclay assures us that he took this moth.

p. 83, No. 244. **Cucullia chamomillae.**

ii. Bond. *Kingsbury.*

p. 83, No. 245A. **Cucullia verbasci** (L.). THE MULLEIN.

i. Rowland Brown. *Harrow Weald.* Larvae common.

The moth appears in May. The larva feeds on mullein in June.

P. 85. INTRODUCTORY NOTE TO THE GENUS PLUSIA.

Mr. Meyrick considers **P. bimaculata* to be identical with **P. chalcites* (Esp.).

p. 87, No. 253. **Plusia gamma.**

**P. ni* differs from *P. gamma* in *not* having the reniform stigma silvery outlined. (Meyrick).

p. 89, No. 256. **Phytometra viridaria.**

ii. Peers. *Harrow Weald.* (Teste Rowland Brown).

p. 92, No. 261. **Aventia flexula.**

ii. Bond. *Kingsbury.*

p. 93, No. 263. **Zanclognatha grisealis.**

iii. Rothschild. 1895.

p. 93, No. 264. **Zanclognatha tarsipennalis.**

ii. Rothschild. 1895.

p. 94, No. 266. **Hypena rostralis.**

ii. Rhoades-Smith. 1895.

p. 94, No. 267A. **Hypenodes costaestrigalis** (St.). THE RIBBED

i. Rowland Brown. *Harrow Weald.* [STREAK.

The moth appears in July and August. It comes to rush flowers and sugar. (Merrin).

p. 95, No. 268. **Brephos parthenias.**

ii. Wall. *Grim's Dyke.* (Teste Rowland Brown).

The following insects were *erroneously* included in Vol. I. They are noted in this Supplement as incorrect admissions.

**Nonagria geminipuncta*.

**Triphaena orbona*.

**Trigonophora flammea*.

The following insects stated *not* to occur in the Harrow district are now recorded ; they have been previously mentioned in this Supplement.

Choerocampa celerio.

Macroglossa bombyliiformis.

Notodonta dictaeoides.

Luperina cespitis.

Grammesia trigrammica ab. *bilinea*.

Pachnobia leucographa.

Xanthia flavago.

Tethea retusa.

Hadena pisi.

Cucullia verbasci.

Hyphenodes costastrigalis.

The total number of *species* recorded from the Harrow district is 469.

INDEX.

* * * The numbers refer to *paragraphs* and *not* to *pages*.

The following have been used :—

I. N. —Introductory Note.

N. ---Note.

K. — Key.

N. K. —Note to Key.

S. —Supplement.

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